THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. X. CHICAGO, JUNE 9, 1888. No. 23.

ADDRESS
IN
MEDICAL JURISPRUDENCE.

THE STATUS OF MEDICAL JURISPRUDENCE AS AFFECTING THE MEDICAL PROFESSION AND THE LAITY.

Address delivered at the Thirty ninth Annual Meeting of the American Medical Association, May 11, 1888.

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A by-law of the American Medical Association requires that "The Chairman of each Section shall prepare an address on the recent advancements in the branches belonging to his Section, including such suggestions in regard to improvements in methods of work, and present on the first day of its annual meeting, the same to the Section over which he presides." To the majority of the Chairmen this should be a comparatively easy task, inasmuch as the advancements in their respective branches are advertised through the media of the medical journals and other publications, are considered by the medical schools and colleges throughout the world, and if deemed worthy, are taught by them.

But to the Chairman of a Section of Medical Jurisprudence in America the work is more difficult because of the indifference manifested by our schools, and the lack of any considerably garnered modern information from which to draw; a deficiency that is, in this country, the result of the limited association of law with medicine. Therefore, the wisdom shown by the American Medical Association in creating this Section is deserving of more than ordinary commendation, because it will not only stimulate to greater activity the workers already in the field of forensic medicine, but will bring in many more. There is not at present sufficient incentive to induce the lawyer to investigate the philosophy or latent principles of the law; there is still less to spur him to inquire into that of medicine. Consequently, he dips no deeper into the troubled waters of even his special branch of science than is necessary to enable him to fill his coffers. Therefore many of the healing qualities of the law though not undiscovered are unapplied.

The busy practitioner of medicine has hitherto imagined he had no time to devote to any division of science which compelled him to go far beyond the pale of symptomatology and therapeutics, and which offered no direct emoluments to compensate him for the time and study that would be diverted from that which he has been inclined to consider the legitimate bounds of his profession. For this reason, and because of the scarcity in almost any form of medico-legal laboratories to which could be carried the crude gleanings of the hardly pressed but enterprising physician, to be so wrought and polished that they could be intelligently applied to law as well as to medicine, much useful information has been lost to the world. And a branch of jurisprudence, second in importance to none, capable of vast expansion, and which should be one of the most useful and active factors of human society is comparatively unavailable.

MEDICAL JURISPRUDENCE A PROFESSION.

That live journal, the Philadelphia *Medical Register*, in an admirable editorial on the subject, says: "It would best become the dignity of science and truth if legal-medicine were held as a definite and distinct profession, in which the emoluments were sufficient to justify a physician in abandoning all other practice in the interest of this special work."

RESPONSIBILITY OF THE PHYSICIAN.

The holding of legal-medicine as a "definite and distinct profession," should now, and I sincerely hope will, in the near future, be possible. But until that period arrive, the doctor who is zealous for the honor of his profession and his own reputation, must exercise a more scrupulous vigilance than has hitherto been supposed requisite. He can no longer be satisfied with the daily writing of so many recipes, or the distribution of so many pills or plasters. To be successful he must not merely keep abreast the times, but must keep, be it ever so little, in advance of them. He must be active in his efforts to discover new worlds in medical science, as well as bold and aggressive in their exploration. He must be fearless but also judicious in the adaptation of new principles, and that he may be both, he can no longer ignore the fact that he must at least possess sufficient knowledge of the law to enable him to distinguish between that which is lawful and that which is unlawful in the application of modern medicine, that he may successfully defend himself against the attacks of the ravening wolves and vultures which will be all the more likely, because of his independent advancement and the shaking off the shackles of old theories, to infest

his path and to endeavor to prey upon him. He must confront the possibility that at any moment the aid of the law may be invoked to seek to hold him responsible for the consequences that may ensue, not only from the use of newly-discovered drugs, but from even the most intelligent administration of well established remedies.

Therefore, when giving medicines, such as sodium salicylate, chloral, or others of like nature, which are liable to be followed by delirium, hallucinations, illusions, etc., it will be best to surround the patient with such safeguards as will prevent him from injuring himself or other persons. He must also bear in mind that many customs though founded on a humane basis, can no longer be followed with impunity; *e. g.*, the physician cannot now safely conceal his lancet, and, without having given his patient warning, plunge it into an abscess; nor, even after the consent of the patient has been given to be anæsthetized, in order to have one eye removed, is it advisable for the oculist to remove both, no matter what grounds he may have for believing it necessary to do so. The consent of the patient to the removal of the second eye is as essential as it was to that of the first. After craniotomy and delivery should life remain in the child the accoucher may not on any grounds complete the work of destruction begun in utero, for the moment the safety of the mother is no longer involved the rights of the fœtus, temporarily in abeyance, are restored, and the law recognizes the sanctity of that life no matter how feeble the existence or how monstrous the form. The time may not be far distant when the operation of craniotomy will have to be justified, not upon a mere assertion of impaction, but upon a basis of actual measurement, and the pelvimeter will have to precede the cranioclast. The physician should also know that the common law does not formally recognize the induction of premature labor, and when his State has failed to afford him protection by statutory provision, unless he exercise extreme caution he may find himself in a situation from which it might be difficult to escape creditably.

Tidy says (Vol. 3, W. L., page 100): "It is manifest that if any question should arise or action at law be commenced against a medical man either for inducing abortion, or for manslaughter if the child born alive died because it was immature, it would be necessary to show (1) that there was a necessity for the operation, the life of the mother being at stake, and the operation being less to be feared than natural delivery; and (2) that his action was *bona fide*." Now the constantly increasing number of conditions which are daily alleged to be sufficient grounds to justify the induction of premature labor may render it hard for a practitioner, in a criminal prosecution, to successfully defend himself against a charge of inadequacy of cause for its performance; therefore, to quote again from Tidy: "We strongly urge upon medical men (1) Not to induce premature labor or abortion without the most mature consideration. (2) Not to undertake it until after consultation with a second practitioner. (3) In any case to have the full consent, in writing if possible, of the husband or guardian."

The trouble that may accrue to the physician from neglecting to observe these rules is clearly shown by Taylor, page 592, where he says: "This practice has been condemned as immoral and illegal, but it is impossible to admit that there can be any immorality in performing an operation to give a chance of saving the life of a woman when by neglecting to perform it it is almost certain that both herself and the child will perish. Any question respecting its illegality can not be entertained; for the means are administered or applied with the *bona fide* hope of benefiting the female, and not with any criminal design." Yet he says further on: "By non-observance of these rules (which I quoted above) the general practitioner, in the event of the death of the woman or child exposes himself to a prosecution for a criminal offense, from the imputation of which even an acquittal will not always clear him in the eyes of the public. Within a recent period several practitioners have been tried upon charges of criminal abortion who had obviously neglected to adopt those simple measures of prudence, the observance of which would have been at once an answer to a criminal charge. Because one obstetric practitioner of large experience may have frequently and successfully induced premature labor without observing these rules and without any imputation on his character, this cannot shield another who may be less fortunately situated."

The physician must also remember that he is more liable to have a charge of criminal abortion brought against him when the woman is single than when she is married; the law in such a case regarding the operation with extreme suspicion; yet the need for its performance may be as imperative in the case of the husbandless female as of her upon whose marriage was set the seal of both Church and State.

The nature of many diseases and injuries is such as to compel the medical attendant to quickly determine his course of action entirely from a medical or surgical standpoint. On the other hand, there are cases in which he must pause long enough to consider his treatment from other standpoints as well as those of medicine and surgery, *e. g*, where marital rights are involved, as when a lacerated cervix uteri is closed to a pinhole to prevent further conception, at the request of the patient, but without the consent of the husband. The operation if successful would, I think, make the gynecologist liable to an action at law, for procreation being one of the principal objects of matrimony, the closing of the wound when not contra-indicated by physical conditions, should be made in accordance with that doctrine; so, also, where the work of the surgeon may impair or destroy the social, civil and political rights of one of those most unfortunate of beings, hermaphrodites.

A striking illustration of the possibility of so doing is given by Taylor, page 718, in the history of an operation performed by one of the most eminent surgeons of the United States upon an infant whose sexual organs were imperfect with predominance of those of the male: "The surgeon considered that for the child's future welfare and happiness it would be better that it should have no testicles at all than it should retain them under such an imperfect devel-

opment of the other organs. He therefore removed them by operation from the labia or divided scrotum, and had the dissatisfaction to find that they were perfectly formed in every respect, and that the spermatic cords were quite natural. Three years subsequent to the operation it was found that emasculation was complete, for the disposition and habits of the being had materially changed and were those of a girl; she was found to take great delight in sewing and housework, and she no longer indulged in riding sticks and other boyish exercises." Thus from regarding the operation from only one point of view, a creature already accursed by fate, is altogether deprived of those rights and privileges which by reason of the predominance of the male sex would have remained to him, such as right of suffrage, privilege of holding office, and the possibility of obtaining the higher wages from which females are excluded

In offering some of the above suggestions I may have seemed to disregard the warning of the proverb about letting sleeping dogs lie, but daily occurrences proving that their sleep is of the lightest, I have remembered the greater wisdom of taking such precautionary measures as will render it impossible for the aforesaid dogs to bite should they awake.

THE NEED OF MEDICAL LEGISLATION.

There has lately been manifested, at the meetings of the Society of Medical Jurisprudence and State Medicine of New York, a laudable disposition to discuss in a practical manner such questions as arise from the ordinary, as well as the more unusual circumstances of daily life. I would recommend to this Section to give to such questions even greater and more critical consideration, as the discussion of such subjects in a common sense way, by these bodies, will surely do something towards stimulating the now tardy and indifferent legislator to take measures to, at least, attempt to mitigate some of the more glaring evils that now exist either because of defective legislation, or from the absence of any laws bearing on them. There is probably no lack which brings greater suffering to a larger number of people than the absence in many of our States, and the neglect of enforcement in others, of proper laws to regulate the practice of medicine. The cries of the victims of ignorance and unscrupulous greed which come not only from one State, but from almost the entire land, should appeal for the sympathy and aid of the law more powerfully than any individual possibly can.

I will do our distinguished legislators the justice to say I believe if they were brought face to face, as physicians are, with the fearful suffering, often followed by death, of the victims of quacks and charlatans, they would exhibit at least a modicum of the interest and energy which they display when a bill is proposed which is likely to interfere with any of their privileges or pleasures, such as chicken matching, or other pursuits or amusements of a like elevated or intellectual nature. In these declining years of the nineteenth century, when, if ever, the human mind might be supposed to be not far from its zenith; when invention has proceeded from triumph to triumph; when the telephone, electric telegraph and cable have overleaped space and made rapid communication possible, not only between the inhabitants of the same city or country, but so linked continent to continent that what occurs in one is, within a few hours, published in the newspapers of the world, one would imagine that the sceptre had been stricken from the hand of Superstition, her temples leveled in the dust, and her devotees converted to a purer and more wholesome faith. But not so. She is as rampant and powerful to-day as ever, her shrines are as numerous and her followers as blind. The mares of her Tam O'Shanters may not be in such imminent danger of losing their tails, but the Tams are as credulous as was their rollicking prototype who so narrowly escaped Nannie's supple fingers. The smoke of the fires that set her cauldrons boiling stifles the air of as many secret places as when the apparitions were called up to answer Macbeth's questions, or so many scaffolds in New England groaned with the burden of their innocent victims. A despot, she troubles but little about improvement in methods of ruling her subjects. The creaking is as audible, the mechanism of her machinery as rude, her miracles as palpable frauds as when she herself was fresh from chaos, but, like death, she gathers in the wise and the simple.

One would suppose her cabinet performances and materialized spirits would not deceive a child; but that some of the brightest minds of the age have succumbed beneath their influence let our lunatic asylums bear witness. Apparently, though, the assisting spirits are more accommodating now than formerly, for at one time they were wont to postpone their coming until the scent of the witches' savory stew was strong in the air. But it has not been mentioned that the spooks who so kindly decorated the canvas held over lawyer Marsh's willing head by the fat hands of Madame Diss Debar were offered even a smell of soup. It would seem that even the electric light cannot so illuminate the mind that there will remain no dark recesses in which false beliefs may lurk and breed. With many of these erroneous conceptions it were futile for either legislator or medical man to attempt to deal until they have taken such form as is likely to be productive of serious harm either to the persons in whom they exist, or to those around them. Of the many phases of superstition which have attained proportions that render them worthy of critical scrutiny, there is none so dangerous as that which makes its possessor the facile subject of conscienceless quacks and death-dealing frauds. I think it is only when attempting to grapple with a matter of this kind that we can ever even partly realize

> "How small of all that human hearts endure,
> The part which laws or kings can cause or cure."

Few persons dream of the extent to which quackery is practiced, or the hold it has upon many men and women who, one would imagine, were far above its influence. Only a few exceptionally atrocious cases are brought to the notice of the public, the obscurity of some of the sufferers, and the reluctance of others to acknowledge that they have ever resorted to such irregular sources, serving as safeguards for the charlatans who torture them. There is no need to pronounce on these creatures and their victims the

malediction Macbeth invoked upon the witches: "Infected be the air on which they ride, and damned all those who trust them." Those who trust them are already damned.

A case in point was brought to my notice some time ago. A man and his wife, whose intelligence on many subjects is above the average, are living in a snug and tasteful home not far from Baltimore. Several weeks ago the woman, who was several months advanced in pregnancy, miscarried. Neither midwife nor regular doctor was called to attend her, and the neighboring women who sought to relieve her suffering with hot applications and other simple means were not allowed to continue their efforts, as both she and her husband believed she was under the influence of a witch's spell, and that such remedies would only increase its malignant effects. Instead of these a so-called magnetic doctor, who professed to be wise in the wiles of witchcraft, was sent for. This distinguished gentleman, who, at the beginning of his medical career, united the profession of a huckster with the practice of quackery, and peddled paper pills and potatoes, witch's potions and charms, ban anas and fish from the same wagon, came with the cheerful alacrity characteristic of his class, bringing with him three charms, at $3 each, which he disposed, as to him seemed best, about her person. At each of his tri-weekly visits he would turn her over on her face, and sit for half an hour holding his stubby fingers two or three inches above her spinal column, explaining that he did not dare to touch her, as the flow of magnetism was so great it would probably throw her into convulsions. During one of his visits, upon her complaining of constipation and requesting some cathartic pills, he called for pen, ink and paper, wrote a few words on a narrow strip, rolled it into the shape of a pill, and made her swallow it, telling her it would have "the happiest, speediest and most gentle effect."

Not being properly attended at the time of the miscarriage, and the feeble contraction of the womb failing to expel the placenta, the woman lay fourteen weeks flat on her back, suffering the most excruciating pain, which was accompanied with a constant discharge of blood and mucus. The retention of a decomposing substance was evinced by the sickening stench which made it almost impossible to remain in the room with the patient, and the absorption of the septic material into the system was manifested by high fever and delirium. Complaining, during one of her lucid periods, of the weakening effect of the continued discharge of blood, the wretch told her he would bring her a prayer which she must repeat until the flow ceased. I doubt if there can be a more pitiable sight than this poor woman, almost at death's door from septicæmia, scarcely able to lift her burning hands to her brow, suffering such agony as might suffice to kill the strongest man, yet, with the tenacity of desperation, striving, even through the vagaries of delirium, to hold fast to that which she hopes will bring her surcease of pain, and with parched lips in almost inaudible whispers repeating again and again fragments of a supplication but little better than wildest gibberish. Yet this is a case in which even a moderately skilful physician might have so assisted nature that in a few days the woman would have been restored to her usual health, whereas she is still confined to her bed with small prospect of recovery.

The above is a fair sample of the methods employed by this, either deluded imbecile or unscrupulous scoundrel, so successfully he has been able to give up the huckstering branch of his business and devote himself exclusively to the cultivation of his magnetism, and the sale of his charms and magic powders. There is no better illustration of the proverb, "Fools rush in where angels fear to tread," than can be found in the reckless use by quacks and mountebanks of powerful and dangerous drugs which even the most experienced of our profession handle with the greatest caution. A physician of good standing will, in using such remedies, be influenced not only by a conscientious regard for his patient, but by the effects which any mistake or lack of judgment may have upon his own reputation. But the unlicensed charlatan, having nothing to lose, and everything to gain, uses the most deadly agents in a way that would appal the community, were it known. The country stands aghast at the devastation caused by some fearful epidemic; yet this is usually short in duration, and it is doubtful if the number of its victims equals the number annually slain by criminal incompetency, yet there is comparatively little effort made to stop the nefarious practice.

An octoroon who flourished some time ago in Baltimore was in the habit of openly boasting that she would take any drug, regardless of its nature, that she could obtain from any source, put it in a bottle and, after pow-wowing over it awhile in the presence of the credulous fools who visited her, would demand, and generally receive, from $5 to $20. Many of the itinerant quacks are the vilest scoundrels on the face of the earth. One of these villains, traveling from State to State, pitching his tent on vacant lots of cities, towns and villages, dressing in fantastic costume, having a band of music and Indian dances, doing anything to attract a crowd to which he could sell his vile nostrums, stopped at a small town in Maryland. While there he was consulted by some foolish girls in regard to some ailments peculiar to women. He insisted upon making an examination, after which he told them it would be impossible to cure them unless they would allow him to have sexual intercourse with them. This is a case in which every decent man would like to unite in himself the offices of jury, judge and executioner; yet this fit subject for the gallows sells his poisons, offers his atrocious insults, and goes on his way unmolested.

A school or college must be of good standing to be allowed to issue diplomas, but any ignoramus can hang out a sign and otherwise advertise as a doctor without having suitably prepared himself to perform the duties of one. In Baltimore an ignorant man, who had served a doctor in a menial capacity, and had had no opportunity to gain knowledge except such as could be acquired in sweeping the office, and emptying spittoons, after his employer's death hung out his shingle, and commenced the practice of medicine on his own account.

Another plea which should be urged is that such persons prevent patients from receiving the service of skilful practitioners. A man who had been injured by heavy lifting was attended by one of these incompetent persons. After the patient's death, which occurred on the third day after the date at which the injury was received, this individual very coolly stated that he did not, while visiting the man, know what was the matter with him, nor did he know what had caused his death. Under such circumstances a regular practitioner, obeying the precept that teaches "in the multitude of counselors there is safety," would have called other doctors in consultation, but ignorance is generally autocratic. There should be a statistician appointed by the State to investigate and report the history of the numerous wonderful cures and operations advertised not only by quacks, but also by physicians of good repute. If this were done, it would be found only too frequently that, while the fame of the performance was being blown abroad, the subject of it was resting under the sod. It is due the public that the per centum of survival, in such cases, should be given, as false statistics are calculated not only to deceive the laity, but also to mislead the profession.

Some months ago a most eulogistic report of the skill displayed by the operator, and the success that attended the performance of a rather uncommon operation upon an inmate of one of our hospitals, was published in most of the papers of the country, but the trifling fact that the woman operated on died in a few hours after was not mentioned. The class that cures the disease regardless of the effects of the method used, is quite too large.

A report was made to me of a case in which a Pennsylvania so-called specialist was to receive $100 and his traveling expenses if he succeeded in eradicating a cancer in the breast of a Baltimore County woman. After her death, which ended three months of terrible torture caused by the application every few hours of powerful escharotics, he demainded and obtained the sum promised, on the ground that he had extirpated the cancer, though the process employed had probably caused the death of the patient, and he had expected that it would when he undertook the case, as experience had taught him that a diseased condition of various organs was generally produced by such eradication; but, being a specialist, he had nothing to do with that. He was only prevented from getting a photograph of the denuded ribs by reason of the light in the room not being sufficient to enable the photographer to do his work, and the woman was quite too ill to be moved to a lighter apartment. He expressed great regret at the failure, as he wished the picture to exhibit as confirmatory evidence of his skill and success.

STATE MEDICAL EXPERTS.

There should be competent men also appointed by the State, at adequate salary, to serve as medico-legal experts on occasions when the aid of such is necessary. I know this point has been urged before, but I think the urging should be continued until successful, as it is exceedingly unjust that any physician, whether willing or not may, at any moment the law sees fit to specify, be required to go on the witness stand in the character of a medico-legal expert. In that place, unless he be well posted in forensic medicine, and possess the coolness and self-reliance required to repel the onslaught of the lawyers, his reputation for knowledge and skill may receive in twenty minutes injuries that cannot be repaired in a lifetime. There are no stitches, however skilfully set, which will so bring together the jagged edges of such wounds that no disfiguring cicatrix will remain, like the mark set on Cain, to be seen and known of all men. No Indian takes greater delight in the agony of his victim than the average lawyer takes in the suffering of the medical witness under the treacherous thrust of the cross-examination. He seems to avenge on him the bitterness of all the potions and the griping of all the pills that have gone down the legal throat from the birth of law to the time of the trial. As the red savage whirls his bloody tomahawk and threatens one part of his writhing victim, and then, with lightning speed, strikes where least expected, so increasing the torture of the certain blow by the uncertainty as to where it will be inflicted, so the legal gentleman flashes before the strained senses of the medical witness, fettered by the law which, forbidding retaliation, leaves him at the mercy of his persecutor, the keen-edged weapon of the law, and the blow falls always where least expected. A contest of this kind, if contest it can be called, where the advantages of freedom and special training are mostly on one side, is as unfair as would be an encounter between the trained pugilist and a man not only ignorant of fistic science, but also handcuffed and gagged. The arena of pugilism is not the only place where freedom and nice training will do more for one than brains alone. The service demanded by the court and for which, in many States, no adequate compensation is allowed, frequently requires an amount of investigation and a consumption of time the physician can ill afford to give. A case of this kind came under my notice a few days before I began this paper. A young medical friend of mine, after having rendered three months of conscientious, gratuitous attendance to a patient who was supposed to be suffering from the effects of a blow, and a kick, learned that he would have to go into court as medical witness. Thus, at the time when he had reason to suppose that his work of charity, at least as far as that patient was concerned, was ended, he is obliged to begin a tedious investigation of the physical and pathological conditions and habits of life of the man prior to the assault. He must patiently inquire into many apparently trivial matters which, nevertheless, may prove to be of the utmost importance in elucidating the history of the case. This information must be obtained from the patient, his relatives, or friends, who will naturally endeavor to conceal whatever may be prejudicial to the patient or favorable to the assailant. Yet, when brought into court, the doctor will be expected to be able to state with the utmost exactness how much of the man's suffering was the result of the injuries received, of his habits of life, or of the pathological conditions which, according to the lawyers,

may, might, could, would or should have existed prior to the assault. If my friend fare on the witness stand as many of his medical brothers have fared before him, he will not be there long before he will find, though ostensibly called there to state simple facts relating to the case, the law will strive to utilize him as an expert, and the time which should be spent by him in assisting in elucidating the truth, will have to be expended in defending his own reputation for knowledge and skill against the imputations of the lawyers.

WHEN ARE DYING DECLARATIONS ADMISSIBLE?

To be admissible, "dying declarations must be made in extremity, when the party is at the point of death, and every hope of this world is gone." In consideration of the fact that the mental and physical conditions of the person at the "point of death" are usually such as to render the reliability of his statement extremely doubtful, no matter how conscientious he may be, there is no time when justice more imperatively demands the presence and aid of an intelligent, experienced physician, than when the law is endeavoring to fasten the crime of homicide upon a prisoner through the identification and dying declaration of the victim of deadly assault, or of foul play. As in many instances the fate of the prisoner rests mainly upon such evidence, no means should be left untried which will assist in determining its credibility. The nature of many agents used to destroy life, and of injuries which result fatally, can be alleged as sufficient reason why, when it is necessary to bring the accused into the presence of the injured person to be identified, the State should, if possible, have a physician present whose duty should be to make a careful examination of the declarant's mental, visual and other conditions. For, at the time the declarant may be trying to identify the prisoner, his intellect and vision may be so disturbed by cerebral anæmia resulting from the loss of blood as to lead to the gravest mistakes. Also because the insidious intellectual changes which are sometimes the sequence of cranial injury may convert the best friends into the bitterest foes, and yet be undetected by inexperienced persons, though they would be suspected by the doctor from the nature of the injury.

Another fact likely to be unknown to a large majority of the laity is that, in anæmia resulting from loss of blood, the upright or semi-recumbent position may render the declarant less capable of making a trustworthy statement, whereas the horizontal position, by encouraging the flow of blood to the brain, would increase mental activity and thus tend to promote the ends of justice.

The effects of the kind and quantity of stimulants given so freely at such times should also be noticed, as these not only vary greatly in different persons, but vary greatly at the different periods at which they are administered to the same person.

Where a woman is dying of septicæmia consequent upon criminal abortion, there may be light delirium, or such form as occurs at intervals, which might slightly confuse the memory and distort the imagination, yet not be discovered by persons unfamiliar with the concomitant symptoms and pathological conditions present.

PREVENTION OF CRIME.

How to prevent crime has been a momentous problem in the past and is still one. The higher education of the masses is generally urged as the best solution that can be offered. When this higher education no longer means, as it mainly does at present, the teaching in a superficial manner by our educational institutions of many comparatively useless branches and so-called accomplishments, but such special instruction and training as will qualify our boys and girls to grapple successfully with, at least, a few of the numerous practical questions which will inevitably confront them, then it can be presented as a potent agent towards the promotion of the desired end. "Ignorance," it is said, "is the parent of crime," but the doctrine of heredity does not exempt the offspring from punishment. In many instances, arraignment and conviction are the first intimations persons have that the deeds committed are crimes.

The limited publication of the laws enacted by our legislatures and the meagre facilities afforded a large majority of our people to acquire knowledge of many offenses at common law are fruitful sources of crime and suffering, as well as of great expense to the State. If the teaching of Medical Jurisprudence were rendered imperative in our schools it would do much to prevent crime, since our youths, both male and female, would not only be taught the nature and enormity of various crimes, and how easily from want of this knowledge persons may innocently become accessory thereto either before or after the fact, but its doctrines would be carried home by them, and thus kept fresh in the minds of the people. If the introduction of Medical Jurisprudence in our schools did no more than teach our girls the sanctity of their relation to, how best to promote the welfare of the life which they may bear within them, and the magnitude of the crime of attempting at any period, by any means, to compass its destruction, also the terrible and lasting, if not fatal effects on the mother of any effort to destroy the fœtus; it is impossible to estimate the good that would be accomplished or the evil that would be prevented.

There is probably no crime more common than fœticide, and none that is so frequently the result of ignorance. Few of the many women that resort to it either to hide their shame, or because they are unwilling to endure the trouble and care of children, have any idea of the heinousness of the deed, of its effects on themselves, or the extent to which it would make them amenable to the law. The ancient doctrine that up to the tenth day it is merely an *effluxio* is still largely believed, and because of the prevalence of that opinion abortion produced within that period is not regarded by the masses in the serious manner it would be if its nature were better known. There are many men and women, even among the higher classes, and living in cities, where it is reasonable to suppose the opportunities afforded for the acquirement of such knowledge are much greater than in sparsely inhabited places, who are totally ignorant

that the destruction of the fœtus during the earlier stages of gestation is a crime even in a moral sense, much less one of sufficient turpitude to render them liable to criminal prosecution.

Another advantage which should not be lost sight of, is that in teaching Medical Jurisprudence in our schools we will be instructing our future legislators in that branch of science and thereby preparing them better to understand the needs of the people, and to frame laws to meet them. If a knowledge of forensic medicine were generally diffused among the laity we would have laws to take cognizance of offenses against the mind which are liable to produce insanity and develop some of its worst types, known as homicidal and suicidal mania. The law prohibits the infliction of corporal injuries and frequently punishes the inflictor, but against assaults upon the mind it at present affords but little protection, yet bodily injuries do not more frequently disable the assailed, unfit him for the performance of his daily duties, and render him incapable of self-preservation than do wounds of the mind. Great mental irritation or distress produced by continued complaining, malicious tantalizing, persistent nagging, ceaseless importunities for things not in the power of the importuned to grant, or causeless accusations of immorality may lead to permanent impairment of mind and body. Men and women have been driven to moral and financial ruin, to lunatic asylums, and to their graves, by the repining over the unpreventable, and whining for the unattainable of persons from whom the exigencies of life rendered escape impossible.

The virtues of the persecuted have in some instances thrown up barriers which their distress could not overleap. A man was observed sitting evening after evening in a saloon. Some surprise was expressed at this as he neither drank nor sought the company of the other frequenters of the place, but sat by himself and seemed dazed and stupid. Upon inquiry it was learned that he was a sober, industrious mechanic who had been driven to this state of melancholia by a querulous wife. This is only one of numerous cases, the history of which would illustrate the need which exists of laws to protect against such attacks. When such assaults are made by the husband upon the mind of the wife, or by the wife upon the mind of the husband, the interposition of the law is especially necessary, since when married it is more difficult for the persecuted person to escape. In almost every contract except that of marriage the law protects the parties thereto from such breach or non-observance of the terms as may be likely to evilly affect individual or joint interest or lead to impairment of the contract. Then why should not the law afford a similar security to the parties to a contract of marriage, and enable either husband or wife to secure the interposition of the court, by injunction, or otherwise, to prevent the continuance or repetition of such acts as are likely to injure one party or both, or lead to dissolution of the marriage itself?

This query, with the preceding proposition, I now submit for your consideration.

THE APPENDIX VERMIFORMIS, ITS FUNCTION, PATHOLOGY AND TREATMENT.

Read in the Section on Surgery at the Thirty-Ninth Annual Meeting of the American Medical Association, Cincinnati, May 8, 1888.

BY HENRY H. SMITH, M.D., LL.D.,
OF PHILADELPHIA, PA.

In writing of "Intestinal Obstructions," Mr. Treves states,[1] that "their importance may, in one way, be estimated by the circumstance that over 2,000 individuals die every year in Great Britain from obstructions of the bowels, exclusive of hernia." Dr. Senn, of Milwaukee, also considers them of such consequence, that during the last eighteen months (January 1888) he has reported[2] "one hundred and fifty operations performed on animals, for the purpose of studying the effects of the principal varieties of intestinal obstructions produced artificially." Treves does not state what proportion of the deaths he speaks of, were due to disorders of the appendix, and Dr. Senn's experiments have not yet been extended to this tube. It is, however, widely known, that the appendix is sometimes a cause of constriction of the ileum, and that stenosis of its cæcal orifice, from inflammation of its coats, or concretions or foreign bodies in its canal, frequently induces local and general peritonitis, peri-cæcal abscess or perityphlitis. Whether the starting point of the latter is in the appendix or the cæcum, is a question yet *sub judice*; but there is much evidence daily accumulating to show that it is the appendix. In the United States, Dr. J. H. Musser, of Philadelphia, states,[3] "that appendicitis is in the *origin* of peri-cæcal abscess, perityphlitis, and peritonitis in about 90 per cent., or perhaps a larger proportion, of such cases," and it is now, I think, generally admitted by surgeons, that perforations of the cæcum are rare as compared with those of the appendix.

In the *Index Medicus*,[4] are references by 248 authors to disorders of the appendix, as the result of the appendicitis. Of these cases, ninety four only are reported as due to the presence of foreign bodies. Some of these authors detail several cases: Lewis, of New York, furnishing forty cases of foreign bodies alone. As seventy-six of these authors were physicians of the United States, the results of appendicitis have been widely recognized, though not so assigned by them. Concretions and supposed foreign bodies, were found in about 30 per cent. of these cases.

Although so well and widely known, Lieberkühn having written "*De valvula cæci et usu processus Vermicularis*" in 1739, and Herlin "*De l' usage de l' Appendice Vermiformis*," in 1718, this organ has not been as minutely studied in its relations to the

[1] Intestinal Obstructions, its varieties, with their Pathology and Treatment, by Frederick Treves, F.R.C.S., London, Phila. Edition, Preface. 1884.

[2] An Experimental Contribution to Intestinal Surgery, with special reference to the Treatment of Intestinal Obstructions. By Nicholas Senn, M.D., Milwaukee, Wis.

[3] The Morbid Anatomy of Peri-cæcal Inflammation, by J. H. Musser, M.D., Phila., Journal American Medical Association, page 71, Jan. 21, 1888.

[4] The Diagnosis of Peri-cæcal Inflammation, by Wm. Pepper, M.D., LL.D., Phila., Journal American Medical Association, page 72, Jan. 21, 1888.

alimentary canal and the process of digestion, as the fatal character of its disorders demands, and though all present, doubtless recall the general anatomical relations of the appendix, perhaps its special structure and its probable function are not so well understood. Indeed, there is reason to think that many practitioners hold the opinion of a recent writer and teacher who states,[4] "we have this little organ (appendix) singularly useless physiologically, placed in a singularly unfavorable position anatomically, and so formed that escape of its contents is very difficult, whilst it is very prone to become diseased."

A few words on the special anatomy of the appendix, may suffice to bring the subject of appendicitis and its results, to the notice of this Section, and elicit such discussions as will tend to show the surgical opinions on the subject, and aid in the scientific treatment of a serious pathological condition that is daily creating increased interest: Pericæcal abscess and perityphlitis being often only symptoms of a pre-existing disordered action in the appendix.

SPECIAL ANATOMY OF THE APPENDIX.

The appendix cæci, or vermiformis, in man, varies in length from six or eight to ten centimetres; or from two to six or nine inches,[5] the cæcum being only one and one-half to two inches long, and widely expanded. The calibre of the appendix, is in breadth internally, about the size of a goose-quill. It is *not* a straight tube, but is generally slightly flexed or curved on itself, and varies in its normal position and direction, being sometimes adherent to the left and posterior face of the cæcum and extending upwards nearly to the gall-bladder, or under surface of the liver.

Its blind extremity points nearly always towards the spleen, though it may dip down into the pelvis and become adherent to the right broad ligament of the uterus or to the right ovary, these variations of position being due to the length of the fold of its peritoneal attachment to the mesentery. Sometimes its free end becomes adherent to some other organ, and is twisted as a loop around the small intestine as a constricting band, causing obstruction or strangulation of the involved bowel. At its base, the appendix opens obliquely into the posterior and inner side—but not the lowest point of the cæcum—just below and on the same side as the ileo-colic valve, whilst its summit or blind end, is rounded and firmly closed. On slitting open the canal of the appendix, we may note the comparative thickness of its walls, and that its mucous coat and sub-mucous tissue, is well developed, and by a semi-lunar fold that partly conceals the cæcal orifice, forms a sort of valve or ridge, that opposes the passage of solids from the cæcum to the appendix, fæces, etc., being forced into the appendix mainly by straining or by vomiting.

Speaking of this valve of the appendix Henlè says[6] "that as a rule, this duplicature of the mucous membrane is sometimes only a small border or projection, but at other times it occupies half or more of the calibre of the opening, and interferes with a free communication between the cæcum and the appendix in either direction. Sometimes opposite to this valve and deeper in the appendix, there is a second valve-like projection." Gerlach states[7] "that in elderly people, these valves of the appendix are atrophied or shrunken, and this is the reason why perforation from the pressure of concretions (Kothsteines or excrement stones) is unknown," and this confirms the opinion that perityphilitis is comparatively rare after 40 years of age. Bauer says,[8] "Typhlitis is most common between 16 and 35." Appendicitis is mostly met with before the 45th year, though sometimes, as in a recent case in New York, the patient was 58 years of age and had sloughing of the appendix, from a concretion, abscess and general peritonitis.

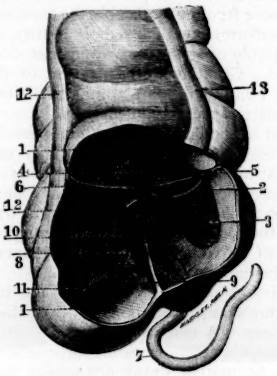

FIG. I.—Circular Section of the anterior and external portion of the cæcum, showing the appendix vermiformis and the ileo-cæcal valve.

1. Distended dried cæcum at its lowest point and below the opening of the appendix and ileo cæcal valve.
2. Orifice of the ileo-cæcal valve.
3. Its inferior duplicature.
4. Its superior fold, as seen on the front.
5. The anterior and internal edge or bridle of the valve.
6. Its longer and posterior bridle.
7. The appendix vermiformis as often found, curved and pointing to the spleen.
8. Its round or trumpet-shaped mouth.
9. The semilunar fold of its mucous coat, which partly closes the orifice of the valve of the appendix. The course of the appendix towards the opening in the cæcum is indicated by dotted lines.
10. The longitudinal muscu ar fibres of the posterior external band of the colon, which are continued under the valve and constitute the longitudinal fibres of the muscular coat of the appendix, and cause its curved shape when contracted. These fibres force the contents of the appendix into the cæcum.
11. The anterior longitudinal band of the colon.
12. Its prolongation on the ascending colon.
13. The posterior longitudinal band of the colon. It will be noticed that there is a pouch of the cæcum below the level of the orifice of the appendix, so that nothing can drop into the appendix.

Copied from Prof. Sappey's Anatomy, Paris, 1874.

The coats of the appendix are the same as those of the other intestines, but its walls are often much thicker, and vary in thickness according to the contraction or diminution of the length of the tube. In its muscular coat, the longitudinal fibres predominate over the circular ones, and are apparently a continuation of some of the fibres of one of the longitudinal bands of the colon. The action of these longtudinal

[5] Reported nine inches by Dr. T. G. Morton, Philadelphia.
[6] Handbuch der Systematischen Anatomie des Menschen. Von Dr. J. Henle, page 178. Eingeweidelehre, 1862.
[7] Gerlach: Abhandl. der Erlangen Physical. Medicin. Societät. 11, 7.
[8] Ziemssen's Cyclopedia of Med. Vol. viii.

fibres of the muscular coat of the appendix, diminishes its length and gives it a curved or vermicular action, thus forcing its contents into the cæcum whilst relaxing and opening the cæcal orifice, and favoring the escape of its secretion. (Dried Specimens) and (Fig. 1.) The power of the longitudinal fibres of the colon thus alluded to is marked, as has been shown in the horse at the veterinary school of Alfort, where bullets, marbles, and other foreign bodies swallowed by the animal, were quickly elevated in the ascending colon by muscular contraction. In a case of artificial anus in the Pennsylvania Hospital, Philadelphia, reported[9] by Dr. Hunt, the vermicular movement of a portion of the posterior band of the colon which is continued into the appendix, was so strong, that a finger introduced into the opening was firmly grasped by the muscular coat, and small articles were drawn up the ascending colon with a great degree of force.

"The follicles of Lieberkühn" or the tubal glands, are numerous, and found in the mucous coat of the appendix. The "agminated glands of Peyer" are also well developed near the summit of the tube. It is not settled that a gland or two of "Brunner" is not also present. In the Herbivora and omnivorous animals, these glands of Peyer are more developed than in the Carnivora. Prof. Colin of Alfort, regards them as secretory organs, and of enormous dimensions in the Rodents. He says[10] "A gland of Peyer of the length of a finger of a glove, lines their appendix throughout its entire length. Sometimes he also found the appendix free from food and entirely full of a beautiful greyish opaque or transparent liquid, analogous to a solution of gum, and this liquid was not found in other portions of the small intestines, but was sometimes found in the colon when the solitary follicles were very closely developed. This fluid is similar to the mucous found in the appendix of man. When stenosis of the canal of the appendix occurs, and the escape of its secretion is prevented, the appendix may become distended to the size of the fore-finger or larger, creating a "Mucocele" a case of which is reported[11] by Feré. In the new born infant the canal of the appendix is relatively larger than in the adult, and often contains Meconium whilst in the adult, small hard particles of solid fæces resembling the dung of mice, or like raspberry seeds, may become the nucleus of concretions that frequently are mistaken for foreign bodies that have been swallowed. In the post-mortem examinations of bodies, accidentally in the dead house of the Pennsylvania Hospital, concretions were found in each as shown in the specimens.*

FUNCTION OF THE APPENDIX.—Whilst the structure of the appendix has thus been studied, its *Function* yet remains in doubt. Indeed, several writers regard the function of this organ as of but little importance, an appendix vermiformis being present only in six varieties of animals. Dr. Chapman, of Philadelphia, says: (*a*) "That a true appendix vermiformis is only found in Man, the Gorilla (*b*), Gibbon (*c*), the Chimpanzee, the Orang (*d*), Wombat (*e*), and Capybara (*f*), and that in many of the mammalia, the cæcum (which corresponds to the cæcum and appendix together in man) is large and often very long; that in the mammalia generally, the size of the cæcum is in an inverse ratio to that of the stomach. In the Capybara or Water-Pig, whilst its cæcum measures twenty-six inches its stomach measures ten inches; whereas, in man, whilst the stomach measures latterally from thirteen to fifteen inches, his cæcum is only from one and one-half to two inches, and his appendix vermiformis measures from three to six inches. Chapman, therefore, regards the appendix in man as having no particular significance or utility."

Morgani, Jno. Hunter, Meckel, Haller, and others, also report authentic cases in men, where the appendix was wanting, and hence, they ascribe little value to its function. Nevertheless, as it exists in connection with the alimentary canal, and as its disordered action disturbs digestion to a degree that often results in death, it may influence our treatment of its diseased condition, to recognize, if only on imperfect proof, its healthy connection with the process of digestion as seen in animals as well as man.

In studying digestion in man, we note that as the chyle passes from the ileum through the ileo-colic valve, it rests or settles into the lowest portion of the cæcum as a liquid substance, on which the secretion of the appendix is poured out. As the liquid elements of the chyle are rapidly absorbed, a thickened mass is seen to form and undergo chemical changes, being transformed from an acid to an alkaline substance with the evolution of hydrogen, nitrogen and other gasses that create a marked fæcal odor, not ordinarily so marked in the small intestines. The absorbent action of the cæcum is accomplished through its mucous coat, which is furnished with numerous follicles or "cryptæ minimæ," of Meckel. The great uniformity of these follicles in the colon, Horner states,[12] "enable us to count them with certainty thro' the microscope. In the cæcum, they are found at the rate of about 400 for every one-eighth of an inch square, and admitting the entire area of

[9] Reports of the Pennsylvania Hospital, Vol. I, page 164, Philadelphia, 1868.

[10] Colin, Physiologie Comparée des Animaux. Paris, 1886, page 91.

[11] Progrès Médical. Paris, 1877, 1 page 53.

(*a*) Transactions Philadelphia Coll. of Physicians. Vol. 9, 3rd. Ser. Page 192. 1887.

(*b*) Gorilla. Eats fruits, seeds and the young shoots of plants.

(*c*) Gibbon. Anthropomorphous Monkey is omnivorous, but prefers fruits and roots.

(*d*) Orang. Eats meats, but prefers fruit.

(*e*) Wombat. (Phascolomes) lives on vegetables.

(*f*) Capybara. Feeds on grasses.

*(NOTE.—Some notes on the vermiform appendix. Received April 30, 1888, from Dr. Henry F. Formad, Demonstrator of Morbid Anatomy in the University of Pennsylvania, and as Coroner's physician, largely occupied on post-mortem examination.)

DR. HENRY H. SMITH, Philadelphia.

Dear Doctor.—From my notes upon cases and studies upon the post-mortem table, I found that you are perfectly correct in your observation that the vermiform appendix is proportionally much larger in infancy than in adult life. Microscopic examination also confirms your observations on the vermiform appendix, with all the glandular elements peculiar to the small intestine, save the Brunner's glands, and that it evidently contributes to the functions of digestion. I have very frequently seen typhoid and tubercular ulcerations, and catarrhal changes, in the vermiform appendix, as a part of a general disease of the mucous membranes of either the large or small intestines. The average length, is from three to seven inches—the length being greater in the colored race, and relatively greater in the Germans and Irish than in other nationalities. Fæcal matter and concretions are exceedingly common in the vermiform appendix, surely much more common than is generally held.

Yours respectfully, HENRY F. FORMAD.

[12] Special Anatomy, by Wm. E. Horner, M.D., Philadelphia. Vol. ii, page 57.

the colon to be 500 inches, and that 19,200 of these follicles exist in every square inch, we have the extraordinary number of 9,620,000 muciparous crypts or absorbing points, in connection with the underlying veins and arteries of the large intestines. That the cæcum alone creates marked changes in the chyle by the absorption of its liquid elements through the blood-vessels and crypts just alluded to, is well known. It is not therefore surprising that this very vascular structure of the cæcum should soon participate inflammatory changes induced by disordered action of the appendix which open into it."

That the appendix exercises some influence on the action of the cæcum in digestion is quite probable, as its mucous coat differs very materially from that of the cæcum and colon in the arrangement of its capillaries and mucous crypts, as shown[13] by the minute injections of Neill, of Philadelphia, in 1851; whilst Gerlach states:[14] "that the intervening spaces between the crypts of the appendix are so prominent, as to make them look like small bridges" a marked anatomical difference. With this vascular structure, we may well suppose that the secretion of the appendix is free, and differs in some way from that of the cæcum. Perhaps it is the source of a lacto-peptone mixed with a large amount of mucus and some phosphates or carbonates of lime, that in some way modifies the formation of the fæces, and by its mucus secretion facilitates their passage up the ascending colon; hence, an early symptom of appendicitis is constipation. The presence of an appendix vermiformis in certain herbivorous animals and its absence in the carnivora, would also seem to indicate that this organ has some influence on the digestion of vegetable matter. Tiedman and Gmellin, long since observed that the gastric juice of the herbivora, possessed this power, whilst that of the carnivora, (that have no appendix) was not sufficiently active to destroy coarse vegetables, cereals or hay or straw.

The term "gastric juice" thus employed by them, is not limited to the secretion of the glands of the stomach, but includes the secretion of the liver, pancreas, and intestinal juices. In the Carnivora that have no appendix, the pancreas is said[15] to be comparatively small, and though participating in digestion, it is well known that both they and the appendix vermiformis can be excised without materially impeding digestion; thus Brunner[16] in 1673, removed the pancreas from eight dogs that continued to live varying periods; their faces remaining normal; and Prof. Colin,[17] of Alfort, in 1857, removed portions of the pancreas in six dogs, the animals subsequently preserving their health and spirits and increasing in flesh.

Whatever may be the part played by the appendix vermiformis in connection with digestion (and its function certainly requires further investigation), it is evident that we have in it a mucous coat liable to catarrhal inflammation, under which changes are created that lead to stenosis of the tube, to the accumulation of its secretion, to distention, ulceration, and perforation of its coats, and to peritonitis, that is soon followed by pus, and abscess in the right iliac region, especially in the loose connective tissue around the cæcum, a symptom often spoken of as perityphlitis. This catarrhal inflammation or appendicitis, resembles in its results duodenitis with obstruction of the ductus communis choledicus, or of the ductus ad nasum with obstruction of the course of the tears from the saccus lachrymalis.

As surgeons, are we not then justified in supposing that the function of the appendix is to aid digestion and the onward course of the fæces from the cæcum, and consequently, must we not in the early stages of appendicitis, carry out the same treatment as would be proper in any catarrh of a mucous membrane? In other words, should we not strive to overcome the early constipation and restoration of the natural secretions of the bowels by emptying the cæcum, and favoring increased peristaltic action? Or, when this fails, promptly overcome the obstruction by an operation?

PATHOLOGICAL CHANGES IN THE APPENDIX VERMIFORMIS.

The varying position of the appendix has been noted by Treves, of London, Fitz, of Boston, Formad, of Philadelphia, and several others. Its most usual position is behind the ileum and its mesentery with the tip pointing to the left, or behind it on the inner ot left side of the cæcum, pointing directly upwards and often adherent to the colon. It may be found in a right inguinal hernia.[18] It may vary in size as well as position, being sometimes small and atrophied, or dilated to the size of a finger or of the ileum,[19] dilatation being more common than atrophy. It usually contains mucus or specks of hardened fæces, but not unfrequently presents concretions or calculi that are adherent to and distend the tube. These calculi or supposed foreign bodies that are swallowed, according to an analysis recently made at my request,[20] were composed of calcium and phosphoric acid ($(Ca_3)(PO_4)_2 = Ca_3H_6(PO_4)_2 = CaH(PO_4)_2$), and did not contain any cholesterin. Another small specimen, (*b*) weighing only 80 milligrams, left about 6 per cent. of ash, consisting of calcium phosphate with a small amount of carbonate of lime. Its structure was laminated. The examination of a second and larger specimen by Dr. Leffman gave the same results, phosphate of lime and no cholesterin. Inspecting a section under the microscope, I found a conglomerate structure of yellowish-brown atoms, united by apparently condensed mucus. Another specimen, at first supposed to be a cherry stone, was examined microscopically by Dr. Guy Hinsdale, of Philadelphia, and proved to be only impacted fæces.

[13] On the Structure of the Mucous Membrane of the Appendix Vermiformis, Cæcum and Colon, by John Neill, of Philadelphia. Medical Examiner, Vol. vii, N. S., page 65, 1851.
[14] Gerlach. Abhandlieder Erlangen.
[15] Dictionnaire de Médecine. Tome x. Paris, 1835, page 348.
[16] Physiologie Comparée des Animaux. Par Colin d' Alfort. Prof. Ecole Veterinaire. Paris, 1886, page 882.
[17] Opus Citat.

[18] Pathological Society. London, vol. xxv, 1874.
[19] Dr. T. G. Morton has reported by Deputy Surg.-Gen. Marston.
[20] MS. of Dr. Guy Hinsdale, Curator, of an analyses of a concretion from the Mutter Museum, made by Dr. Henry W. Cattell, Assistant Demonstrator of Chemistry, University of Pennsylvania. The nucleus was hardened fæces.
(*b*) Analyzed by Prof. Henry Leffman, M.D., of Pennsylvania Polyclinic.

It gave a reaction for magnesium, which the others did not.

Blood, fæces, seeds and substances swallowed, as shot and pins, and entozoa or lumbricoides are also occasionally met with in the appendix, which, inducing inflammation, lead to various disordered conditions. Thus, Ashby[21] reports a pyæmic abscess of the liver as secondary to ulceration of the appendix resulting from the impaction of a pin.

Joffroy[22] reports the perforation of the appendix by a pin, symptoms of typhoid fever, peritonitis and death.

Audouard,[23] a perforation of the appendix, perinephritic abscess of the right side and consecutive empyema after perforation of the diaphragm by the pus.

Becquerel[24] mentions the issue of lumbricoides into the cavity of the peritoneum through a perforation of the appendix.

Mestivier[25] speaks of a tumor near the right side of the umbilicus occasioned by a large pin found in the appendix.

William Pearson, Jr.,[26] reports ulceration of the appendix; portal phlebitis and multiple abscesses of the liver.

Freeman,[27] an abscess of the appendix followed by phlebitis of the left leg.

Bontecou[28] relates three cases of abscess and pelvic peritonitis from perforation of the appendix.

Claiborne,[29] an abscess of the appendix opening externally.

Thornton,[30] ulceration of the appendix and fatal peritonitis, produced by an orange seed (?) or what was supposed to be such.

Mason reports perityphlitis with perforation of the appendix; rupture of the wall of the abscess, causing general peritonitis and death seventy-four days after the abscess had been freely opened. These are but a few of the well recorded cases of the results of appendicitis.

For these and previous references I am indebted to the *Index Medicus*.

The glands of Peyer in the appendix may become the seat of tuberculous deposit, softening, ulceration and perforation, as is sometimes seen in phthisis pulmonalis, or there may be a perforation of the appendix from softening and ulceration of Peyer's glands in typhoid fever. Great changes in the walls of the appendix sometimes result from appendicitis. When ulceration supervenes, the walls and the canal may become contracted and indurated, the appendix being so shortened as to be only 1 or 2 inches long, giving the operator the impression of its being a gland or neoplasm; but a careful examination with a probe will usually detect the canal of the appendix.

The stenosis of the canal of the appendix, leading to a retention of its secretion, not infrequently results in the formation of a calculus, as before stated, the nucleus of which may be a speck of hardened fæces around which the mucus collects, receiving in addition a deposit of phosphate or carbonate of lime. As the liquid is absorbed, the layers of the calculus become denser and it is moulded to the shape of the canal, impacted, and often firmly held in place. Sometimes several calculi, from the size of a raspberry seed to that of a date or olive stone, for which they may be readily mistaken, are also seen.

Whilst writing this, I received from Deputy Surgeon-General Marston, of London, his report to the British War Office of the meeting of the Ninth International Medical Congress. In this I find his opinion corresponds with my own. Writing of appendicitis and ulceration he says:[31] "These are often described in the text-books as due to the introduction of foreign bodies into the canal, but in my experience, while such may be present, they are not always so. Apart from tuberculous affections of the glandular structures of this part of the bowels, all the cases I have seen have been of a similar character. The canal contains a substance in shape and form like a date stone, fairly dense, but capable of being cut or indented by the finger-nail; of a brownish or yellowish brown color, formed apparently as follows: An insignificant fragment of fæcal matter finds its way into the canal of the appendix vermiformis; catarrhal inflammation follows, with a fluid secretion holding phosphate in solution as a product of the inflammation. The fluid being absorbed, the phosphate forms a soft concretion, which becomes moulded to the shape of the appendix and in turn sets up inflammation, ulceration or sloughing of the coats of that part of the intestine."

SYMPTOMS OF APPENDICITIS.

The symptoms of appendicitis are, in the commencement, such as indicate disorder of digestion, the disease appearing sometimes without premonitory symptoms and resembling a certain type of colic, with vomiting and griping pains, that at intervals attain great severity and double the patient up, to relax the abdominal muscles. Sometimes the right thigh is flexed on the pelvis to relax the iliacus internus and psoas muscles. The pain may be preceded or followed by vomiting, first bilious and subsequently stercoraceous. Often there is pain towards the navel and a sense of constriction of the belly as in hernia, with continued constipation, or one or two movements of the bowels and then constipation. These symptoms, under the ordinary treatment of colic, may pass off and not return for several weeks; but after an uncertain period of weeks or months, the griping and vomiting return with more violence, though sometimes the attack is violent from the commencement, with evidence of disorder in the right iliac or lumbar region, the patient ignoring previous attacks and misleading his physician, unless closely questioned. When the symptoms are severe and last for twenty-four or forty-eight hours, with tender-

[21] London Lancet, vol ii, 649, 1879.
[22] Bulletin Société d'Anatomie, 44. p. 512, 1869.
[23] Progrès Médical, vol. iv, p. 416, 1876.
[24] Bulletin Société d'Anatomie, vol. xvi, p. 169. Paris, 1841-42.
[25] Journal de Médicine et Chirurgie et Pharmacie, vol. x, p. 441. Paris, 1759.
[26] Transactions of the Medical Society of New Jersey, 1879, p. 279, 1881. Newark, N. J.
[27] Canada Lancet, vol. iv, p. 268. Toronto, Can.
[28] Trans. Med. Soc. of New York, vol. lxvii, pp. 137-139. Albany, 1873.
[29] Claiborne. American Weekly, Louisville, vol. i, p. 53.
[30] American Medical Weekly. Louisville, 1874, vol. i, p. 305.

[31] Report on the Ninth International Medical Congress, by Deputy Surgeon-General Marston, representing the War Department. London, p. 42.

ness and evidence of local peritonitis, fever is apt to follow; the pulse counting 90 or more and the temperature reaching 102° or more, with indication of localized pain. Free urination also is often a marked symptom. The belly sometimes becomes tympanitic and percussion may indicate a degree of flatness in the right side or towards the umbilicus; but flatness is not always noted, owing to gas in the colon. Sometimes, under the relaxation of ether, it is possible to recognize by palpation a spot that is doughy or more resisting than natural. Sometimes it is more prominent than usual, and sometimes it is possible by relaxing the abdominal walls to circumscribe a swelling or tumor that is sensitive to the touch and corresponds with the position of the cæcum, but often there is only a thickening of tissue and no defined tumor. As gas cannot escape from the bowels, tympanitis becomes more marked, fever increases, with pain, and symptoms suggestive of perforation of the bowels and acute peritonitis appear; but frequently we note only a slight acceleration of the pulse during the colicky pain and are liable to be misled by the temporary relief of pain and the absence of swelling or fluctuation.

DIAGNOSIS OF APPENDICITIS.

One of the marked difficulties met with in the treatment of appendicitis is a correct diagnosis, and this difficulty is so great that Mr. John Hunter[32] said it never could be satisfactorily made during life. This difficulty is often increased by the fact that the case is sometimes under the care of the family physician who only calls for the surgeon's assistance at the last moment. When seen early appendicitis may be suspected from previous history, especially a continued tendency to constipation and the repetition at varying intervals of colic or vomiting. When a suspicion exists of the presence of obstruction in the appendix a correct diagnosis can only be arrived at by exclusion. Thus, are the symptoms presented due to hernia, to volvulous, an intussusception, a tumor of the mesentery, or other organs. Comparison of the symptoms of each of these with the history of the case will greatly aid the diagnosis. Then, the patient being etherized, let careful palpation be practiced of the right iliac, hypogastric and even lumbar regions. Sometimes a cæcum can be recognized as impacted, sometimes a doughy or imperfectly indurated structure can be felt in the right iliac or lumbar region; at other times there will be severe acute pains in these regions. When any of these symptoms are recognized, when the pulse and temperature permanently rises and there are the symptoms of peritonitis, the diagnosis may be regarded as sufficiently correct to justify surgical interference. If laparotomy is performed and the diagnosis of pus, perforation, or thickening of the appendix is not found, the result will be often more favorable than the subsequent changes induced by appendicitis left to nature. The use of an exploring needle is liable to serious objections and dangers and is not a useful addition to our means of diagnosis.

[32] Eberle's Practice.

PROGNOSIS.

The prognosis of appendicitis is always grave, and the result uncertain, the patient's condition resembling that of one with a reducible hernia, liable at any moment to be strangulated. Sometimes under early and appropriate treatment the symptoms of appendicitis disappear, the disease terminating apparently in resolution and in the restoration of the peristaltic action of the cæcum; but in other instances, where there is hesitation in diagnosis and delay in treatment, the disease running on to a perityphlitic abscess, perforation of the appendix, artificial anus, or death from peritonitis may be anticipated. The prognosis is always largely influenced by the duration of the symptoms, especially when local peritonitis is being developed. Laparotomy under such circumstances offers the only chance for a successful termination, for as Marston[33] has said, "there seems no reason to doubt that by a timely operation such cases might be saved."

TREATMENT OF APPENDICITIS.

As the details of laparotomy and its after treatment are to be presented by Dr. Morton and others who will follow, I will only urge upon the Section the importance of an early recognition of appendicitis and the carrying out of a preliminary treatment adapted to intestinal catarrh, such as the administration of 5 grain doses of calomel until 20 or 30 grains are taken, this being often readily retained by the stomach even when it rejects liquids; the free use of stimulating enemata containing soap and turpentine; the administration of hypodermic doses of morphia to relieve the griping, and the administration as soon as the stomach can retain it, of a dose of sulphate of soda or magnesia, the first being preferable. I am aware of the arguments against the use of purgatives in general peritonitis; but I am now speaking of the early stages of appendicitis, with probable stenosis of the canal, and before perforation occurs. In this stage saline purgatives relieve congested vessels, increase the serous discharges, empty the cæcum, and favor the escape of the secretion of the appendix. An important part of the early treatment of appendicitis is, to etherize the patient and by judicious palpation or taxis, endeavor to recognize the obstruction and favor peristaltic action. This palpation should be exercised with the same caution as would attend the attempt to reduce a strangulated hernia. After persevering for 48 hours with this treatment, if relief is not obtained, I would at once resort to laparotomy under strict antiseptic precautions.

The line of incision in laparotomy for perforating appendicitis will be hereafter stated by Dr. Morton. The incision in the median line, known as the Cæsarean section, is the ancient one, a successful operation in a so-called case of ileus being reported by Dr. Fuschtius in *Hufeland's Journal* of Feb. 7, 1826.[34] Whatever incision is selected should be prolonged until the appendix is found. Let the surgeon *first look for and examine the appendix for calculus or*

[33] Report of 9th Congress, by Marston, 1888, p. 43.
[34] Eberle's Practice of Medicine.

perforation, and the subsequent steps of the operation can be decided by circumstances. Generally it is safer to ligate the appendix and cut it off close to the cæcum, and I am satisfied that an early laparotomy offers less risk to life than a temporizing course, that is liable to end in suppuration of the connective tissue of the vascular structure of the cæcum and the development of a general peritonitis. The simple evacuation of the abscess without amputation of the appendix does not secure the patient against a return of the trouble, as was proved in a patient shown me by Dr. Morton, and will be reported by him.

SUMMARY.

The following summary is presented for the discussion of this subject:

1. Appendicitis is characterized by constipation, vomiting, griping pain, and other symptoms of disturbed digestion.

2. Appendicitis very frequently creates the pathological conditions that result in concretions, ulceration, perityphlitis, or pericæcal abscess.

3. When a diagnosis is made and a preliminary treatment of an intestinal catarrh fails to arrest appendicitis, laparotomy should be promptly performed.

4. A delay in operating in appendicitis, as in strangulated hernia, increases the danger of a fatal termination.

APPENDIX.

The following translation from Herlin's paper, as alluded to in the first part of this paper, was made and forwarded by A. Asst. Surgeon, D. S. Lamb, U. S. Army, but arrived too late to be incorporated in the text. As it exhibits the opinion of an anatomist on the "function of the appendix vermiformis" in 1768, it is now offered for consideration of the reader.

Philadelphia, May 12, 1888.

REFLECTIONS AND OBSERVATIONS ON THE USE OF THE VERMIFORM APPENDIX OF THE CÆCUM.

By M. Herlin, Demonstrator of Anatomy at the Port of Brest. From Journ. de Méd. Chir., etc., July, 1768, page 321.

Anatomists have devoted themselves through all time, to determining the use of the parts which they described, and demonstrating their mechanism. Although they have satisfied us as to an infinity of interesting objects by which medicine has profited, it is necessary to admit that they have not yet discovered all, and that there are some parts the use of which is but little known. Since all that has been said upon the use of the appendix of the cæcum does not explain the changes and variations to which this part is subject, and is hardly in accord with the arrangement or the function of organs to which this body appears to be destined, might we not advance what has not been guessed heretofore, viz., to determine the true destination of it. Supported by observation, I shall try to do it, although the result may appear to have but little interest; but it is important always to know what it is, if only to satisfy our curiosity.

Of all the opinions that have been proposed as to the *use* of the appendix of the cæcum, it is only that which assigns to it the property of being the reservoir of a mucous humor, flowing continually into the cæcum to lubricate this intestine, and protect it from the acrimony of matters lodged there, which has some truth in it, and which merits attention; but this is very far from filling the idea one ought to have of the utility of this part, as I will soon show. To say with some anatomists, that the appendix of the cæcum is not larger in the fœtus than in the adult, (caused by the distension the part experiences from the presence of mucus retained in its cavity by the presence of the meconium) is to hazard an opinion that the inspection of the part contradicts; since we do not find it more sensibly charged with this mucous in early life than in the adult, and one observes on the contrary, that this little intestine is smaller in persons in proportion, as they are more or less constipated and subject to stercoral colics. Another object on which anatomists have passed, and which demands attention, is that the cul-de-sac of the cæcum is scarcely marked in the fœtus, but increases more or less with age, and about in proportion as the appendix in developing loses in length; without doubt, because the change is made so insensibly during the whole course of life. The opening of the bodies of some sailors who died of a kind of colic called dry colic, opened my eyes on this subject. I found the appendix of the cæcum in two of the subjects almost entirely effaced; the cæcum and colon enormously dilated and filled with a quantity of hard matter and much rarefied air. The coats of the colon were very thin; its sacs had disappeared, and its ligamentous bands were scarcely visible; while those of the cæcum, continuous with it, and the coats of the cul-de-sac, appeared to have lost very little of their ordinary thickness.

I see then in this, not only the explanation of the phenomena that the cæcum and its appendix have presented to me in the state of disease, but the reason of all the variations naturally seen in the disposition of this organ, which determines more exactly its use.

In order to conceive the thing, it is enough to have present in the mind, the disposition of the cæcum and colon. One soon feels that the matters retained in the cæcum cannot pass out into the arch of the colon, because they would be raised considerably against their own weight, and the power to act on them can have the effect only of pressing them laterally; whence it ought to result that the tendency of the matter would be, that part of the effort would necessarily be lost in the fundus of the cæcum; here we find a point of support that reacts upon them with more advantage as the cæcum is fixed and retained by its ligaments; and as it cannot escape the force which is applied perpendicularly by the stercoral column upon its fundus. This function, continuous and necessary to nature, and which tends without ceasing to dilate and elongate the fundus of the cæcum, would soon thin and burst it if nature had not taken precaution against such accidents by a mechanism as simple as admirable, in sustaining the fundus of this intestine, so that the three

ligamentous muscular bands, which contract the colon, form with it the appendix, and present a part which is insensibly developed, and foreshadows (in furnishing the augmentation of the cæcum) the thinning of the coats, and perhaps in certain cases, the rupture of this intestine, preserving always by this arrangement, of the three bands placed along the length of the colon, an equal and durable force, which would not have been the case if they had been placed transversely and sustained the fundus. It is also to preserve this function, and to render it solid and durable, that nature has thrown a little on one side, the narrowing of the cæcum; the weight of matters thus acts less directly on this part, and development is a little more difficult, and with a slowness which is an advantage. It is quite true that in the appendix there is filtered a mucus; and therefore we should regard it as one of the uses of this part, to furnish a matter capable of lubricating the cæcum, but which, at the same time, is capable of opposing efficiently the extension of the walls of this little intestine which we may regard as a corner stone.

The contraction and the folds of this part, which are larger as the appendix is elevated, and more favorable to turn out the liquor which is filtered into the cæcum, and are intended to prevent the too rapid flow of the mucus, the presence of which in the appendix is necessary to the preservation of its state.

From all these economic views of the use of the appendix vermiformis, it is easy to deduce all the natural or accidental varieties that this part may present in different subjects and all ages. Why, for example, when the appendix corresponds to the fundus of the cæcum, we find it larger and less shrunken? Why, as age increases, this part is found shorter than in subjects where the appendix is placed on the side, and as in this last case, when the appendix is much narrowed and very long, we find in the progress of age the cæcum capacious and its walls very thin. We explain also easily, why women who have had children, have the appendix short, and the cul-de-sac of the cæcum very long; in a word, there are no phenomena which I have mentioned above, which may not be ascribed to this explanation, and confirm at the same time, the use which I believe should be assigned to the vermiform appendix.

TREATMENT OF ACUTE AND CHRONIC PURULENT INFLAMMATION OF THE MIDDLE EAR (OTORRHŒA).

Read before the Philadelphia County Medical Society, April 25, 1888.

BY LAURENCE TURNBULL, M.D.,
OF PHILADELPHIA.

The cavity of the tympanum, or middle ear, in health is filled with ever-renewed air by the Eustachian tube, and thus the waves of sound reach the labyrinthine nerve of the ear. It is deeply and securely situated in the temporal bone. It measures 2 lines from the membrana tympani inward, its breadth and height being about one-half inch, and its shape is the form of a cube. The cavity of the tympanum is apparently lined with a continuation of the mucous membrane of the Eustachian tube, and yet the epithelium is distinct—that of the Eustachian tube is ciliated, whilst in the middle ear it is tessellated, or in squares. This epithelial and subepithelial lining takes the place of a periosteum by transmitting the blood-vessels which supply the bones. This latter fact is important to notice, as any serious affection of this membrane will ultimately react upon the nutrition of the bones forming the cavity, thus resolving a severe catarrh into an ostitis. The existence of this mucous cushion is the reason why affections of the middle ear are so numerous in young children. The close contact of the jugular vein to the cavity of the tympanum exposes it to the influence of pus collecting on its floor.[1]

In acute otitis media, or inflammation of the middle ear, there are frequently but slight pathological changes in the ear except swelling, deep redness, and small perforations of the membrana tympani. The discharge is either mucus or mucus and pus. This can be shown by the pus dissolving in water, and the mucus found floating on the top.

By the use of anodynes, cocaine, chloroform, morphia, etc., pain is relieved; with the internal use of tincture of aconite, antipyrin, frequent hot foot-baths, with local depletion, inflammation is checked. The parts should be cleansed with a mild, warm, antiseptic wash, and, as a rule, all goes well. The case generally recovers in a short time, without any permanent injury to the hearing apparatus, if not neglected. You, medical gentlemen, are all familiar with this disease in young persons and children, the latter having as many as two, three, and even four, acute attacks during teething, or the result of the exanthemata or cold. This disease is now so well known and, as a rule, so promptly treated, that a much smaller number of cases are now permitted to pass to the second stage of inflammation of the middle ear—the purulent variety—which causes such extensive changes in the hearing apparatus. In such cases of acute otitis media Zaufal finds exclusively the two forms of microbes found by Friedländer and Fränkel in pneumonia, viz.: a large, short bacillus, encapsulated, and a diplococcus, also encapsulated. He has also shown that the exudation in acute otitis media, before rupture of the membrana tympani, contains pneumococci to the exclusion of all other microörganisms, and that these, introduced into the nasal fossæ, can give rise to a meningitis without irruption of the cranial envelope.[2]

In collecting a large number of cases of suppuration of the middle ear, which includes three or four years, I find that, out of 1,700, 454 were acute, while 1,246 were chronic; 18 had facial paralysis, while the balance included polypi, caries, necroses, cholesteatomata and tubercles. Let me dwell, for a short time, upon some of these changes, the most important and extensive of which are found, not in the

[1] Extract from the author's Clinical Manual of Diseases of the Ear, 1871 and 1878. Philadelphia: J. B. Lippincott Co.
[2] Annales des Maladies de l'Oreille, January, 1888.

meatus or that portion of the ear covered by skin, but in the mucous membrane of the middle ear, back of the membrana tympani, extending into the mastoid cells, and through the Eustachian tube to the throat and nose. After this disease has existed for some time, there is an increase of the bulk of the mucous membrane, caused by excessive infiltration with round cells, and enlargement, with new formation of vessels.

The subepithelial layer, stripped of its epithelium, is replaced by round cells; a suppurating, granulating surface, traversed by many vessels, takes its place. The purulent process leads to destruction of the tissues, to ulceration and wasting of the mucous membrane, which is eaten away so that the bone is often laid bare.

This is especially the case in tubercular otitis media purulenta, and it has been demonstrated by numerous post-mortems that they tend in a very short time (six to eight months) to extensive necrosis of those parts bordering on the diseased middle ear, and extending into the labyrinth, the rapid course of the disease being due to the tubercular diathesis.

It is also often the case, in this form of disease of the ear, that tinnitus and impairment of hearing precede the perforation, which is most generally painless, but with rapid destruction of the drum-head. By the transformation of the round cells into spindle-shaped, there occurs a formation of a firm connective tissue, which leads to abnormal adhesions between the membrana tympani, the ossicula, and the walls of the tympanic cavity, producing permanent deafness. The membrana tympani almost always suffers a loss of its structure, and in severe and protracted cases we have large perforations.

Treatment.—These perforations are most ordinarily treated by a combination of alteratives, so as to modify the nutrition and prevent the destructive tendency from gaining headway. The local application is also of importance, especially such remedies or local means as change the surface of the granulations, gently stimulate and cleanse them. No agent in our hands has acted so promptly and well as very finely *levigated* boric acid, alone or in combination with iodol, the latter to act as a true antiseptic, using 1 part of the iodol to 10 of boric acid. Boric acid used alone should be sterilized, by heating before using on a platina foil, as it contains fungi and bacteria when kept for some time. The powder must be carried down to the perforation, and through it as much as possible, so as to reach the diseased mucous membrane and the Eustachian tube with the little instrument I show you. If it is blown in, it adheres to the edges of the auditory meatus, causing irritation, and sometimes small abscesses. This powder has a stimulating and an astringent effect, just as alum used in the same manner. It should be packed carefully, so that the diseased membrane be fully covered. It is not necessary to seal it; indeed, it is almost impossibe to cause the retention of the pus in the cavity, as the powder absorbs it, and the former when applied produces a watery discharge by its stimulating effect, so that the patient will be obliged to wipe off the liquid.

As to boric acid causing retention of the secretion in the treatment of necrosis of the temporal bone, or in a large perforation, it has not acted so with me. I have used boric acid since 1881, after my return from Europe, and like its introducer, Freidrich Bezold, of Munich, I have been convinced of its efficacy in these severe cases, and that the objections to its use —*i. e.*, its causing retention of the secretions—as advocated by some, are entirely without foundation. According to his and my own experience, extending over a period of seven or eight years, its use has always been followed by favorable results, so *he* had no reason to modify his statements made in 1870,[3] as to its therapeutic value. He has also confirmed his opinion of the unreasonableness of these objections by a series of physiological experiments, in which he tested the capacity of absorption of powdered boric acid for fluids outside of the body, before, as well as after, saturation and drying out of the powder with purulent secretion which enclosed in a glass tube covered with a perforated membrane was exposed to the influence of fluids from the ear.

This special mode of treatment is peculiarly applicable to large perforations of the membrana tympani; when the perforations are small they are more effectually treated by a solution of boro-glyceride, carbolic acid, or peroxide of hydrogen.

When the perforation is situated in the membrana flaccida or Shrapnell's membrane, with disease of the attic of the tympanic cavity, we resort to a syringe (intertympanic), or a catheter to which a soft rubber ball with a double valve is attached, to withdraw the fluid, and not let it return when diseased; either of which is inserted into the perforation and the parts washed with a solution of peroxide of hydrogen or an antiseptic. If carious bone be found, covered with polypi, the latter should be snared and the dead bone removed; but if the bone be found only inflamed it should be treated by diluted nitric or carbolic acid, to stimulate the granulations and restore it to its normal condition. All tearing and cutting operations—as these tend to malignant disease—must be avoided; everything should be done with extreme care and gentleness. When pus blocks the tympanum in disease of the middle ear the tuning-fork is heard better through the air than through bone. But when the pus is removed, and the inflammation is reduced the bone conduction will again improve as the pressure has been removed from the labyrinth.

It has been found that functional disturbances in hearing are produced by chronic purulent inflammation, by the cicatrices and changes in the membrana tympani, and adhesions before referred to in the middle ear, after all discharge has ceased. First, the alterations in tension of the sound conducting apparatus, caused by the cicatrices producing irregular vibrations in the membrana tympani. Second, cicatrices which cause adhesions of the membrana tympani with the promontory, and the articulation of the incus with the stapes, impeding the power of vibration of the ossicula. Third, if the adhesions are confined to the portion of the membrana tympani situ-

[3] Arch. für Ohrenheilkunde, Band xv, and in the Ærtzliches Intelligenzblatt, 1881, No. 26.

ated below the handle of the malleus the acuteness of hearing has been found to be considerable, while adhesions in the upper half of the membrane produce more disturbance of the hearing, or deafness, especially when the handle of the malleus is drawn inward and ankylosed with the promontory. Fourth, it has been proved that imperfect hearing power may exist even in cases of extensive destruction of the membrana tympani, and with the loss of all the bones, except the foot-plate of the stapes—that is, if it were movable, and the membrane of the fenestra rotunda was not thickened. The regularity of our perception of tones is due to the deadening of the sounds produced by the ossicles, the membrana tympani can only be properly considered as a sound conductor in connection with the ossicles. Even if fair hearing of speech and music remain, the removal of the membrana tympani, or protecting membrane of the tympanic cavity, is dangerous to life, for it is deprived of a covering which is essential to its continuation in health. To retain and restore to a healthy condition the diseased and ulcerated bones of the ear and the membrana tympani is of the utmost importance.

Extension of this chronic purulent disease of the ear by the Eustachian tube as a pus-carrier, produces disease of the upper part of the nasal cavity, by developing polypi, enlarging the pharyngeal tonsils, adenoid growths, and hypertrophic enlargements of the turbinated bones and ozæna.

We fully agree with Politzer, that combinations of ozæna with disease of the ear are much rarer than we would suppose, from the extension of the process toward the entrance of the Eustachian tube. When the ear is implicated, the mucous membrane of the middle ear becomes most frequently sclerosed. In many cases of deviations of the septum we have found perfect hearing, unless complicated with prior ear disease, or exostitis extending through the whole line of the meatus; these are removed by the dental engine. Such cases suffer from coryza or cold in the head, commonly so called, but are promptly relieved by a 4 per cent. solution of cocaine. There are also many cases of anterior nasal polypus which do not produce deafness.

One of the chief causes of deafness is the extension of the pharyngeal tonsil into the tuberosity of the Eustachian tube, and even into its osteum. In the so-called ethmoiditis of "Woakes" there is not necessarily any causal connection between the ear and these affections; in many cases the nasal trouble has long existed without involving the ear. If the ethmoid cells become diseased, or necrosed near the Eustachian tube, then we may have paresis of the palate attended with a distressing form of tinnitus, as in one case under our care, there was perforation of the membrana tympani from extension of the irritation through the Eustachian tube. In this case the patient recovered under local and constitutional treatment. The removal of the diseased spicula of bone, or hypertrophied tumors from posterior portions of the turbinated bones, improves the deafness of cases of long standing, when attended with retraction of the membrana tympani, the results of naso-pharyngeal disease. There is an absolute necessity that the pressure of the air—which is fourteen pounds to the square inch—should be equal on both sides of the membrana tympani, and all obstructions to this must be removed to attain perfect hearing. It is of importance that our patients, convalescent from chronic purulent ear disease, should breath through the nose, and be able to shut the mouth, especially when sleeping, to prevent the drying effects on the throat and Eustachian tube. This is accomplished by a mouth-band tied behind the ear, as recommended by Delstanche, in the case of children, after the removal of the cause. The proper treatment of the naso-pharyngeal disease should always precede this, in order to see that nothing obstructs the respiration, and to watch the controverting effects of all operations by the use of nasal tents of laminaria, or those of platinum, or glass covered by soft rubber, and thus keep up nasal intubation.

1502 Walnut St., April 25, 1888.

MEDICAL PROGRESS.

TRANSPLANTATION OF NERVE FROM THE RABBIT TO MAN.—DR. GERSUNG, of Vienna, assistant to Professor Billroth, has recently performed a novel and interesting operation—the transplantation of nerve from the rabbit to man. The case has not hitherto been published in any medical journal but, owing to its general interest, the bare fact had found its way into the lay newspapers. Our Vienna correspondent has received from Dr. Gersung a verbal account of the salient points of this most remarkable operation, which has so far been conspicuously successful. The patient is Professor von Fleischl, the distinguished occupant of the chair of physiology in the University of Vienna. Sixteen years ago he accidentally wounded himself while conducting a post-mortem examination, and severe inflammation of the whole right upper limb ensued. During the course of the disease the terminal phalanx of the thumb became gangrenous. The stump thus left was painful, and later on reamputation was performed. This was followed by the formation of neuromata. For this condition the branches of the median nerve which supply the thumb were first resected, together with the terminal neuromata, and at a later period, when new neuromata began to develop, the central parts of the same nerve, together with the branches of the radial nerve which supply the thumb, were resected. Fresh neuromata now developed on the branches of the median nerve, which were treated, without any success whatever, by the injection of hyperosmic acid and electrolysis. Two years ago the neuromata were resected again, and the resection of the nerves was continued as far as the "ligamentum carpi volare;" on this occasion, the branches which supply the radial and the ulnar sides of the index, as well as the radial side of the middle finger, were resected to a great extent. The forefinger now became anæsthetic, except the dorsal aspect of its first phalanx, which, as is known, is supplied by the radial nerve;

in the same way the whole radial side of the middle finger became anæsthetic. The pain, however, again recurred, as after the previous operations, and during the course of the second week after the last operation, the patient became aware that a fresh neuroma was developing. The suffering finally became so severe that the patient wished to undergo another operation, in order to procure, at least, temporary relief. Accordingly the following operation was performed: On March 4 the patient was put under the influence of chloroform, and the neuroma, which was situated behind the volar carpal ligament, was excised, the nerve being cut through behind the neuroma. The peripheral nerve stumps of the two digital branches above mentioned were then sought for. A rabbit was now killed, and as long a piece as possible of the sciatic nerve of the animal, with the two branches into which it becomes divided, was dissected from it (the animal still presenting voluntary contractions). The sciatic nerve was afterwards inserted into the space between the central stump of the median nerve and its digital branches; the central end of the sciatic nerve was sutured to the connective tissue which covered the median nerve, and the two branches were sutured to the digital branches of the median nerve; the portion of nerve, measuring about 6 centimetres, which was deficient was thus made up. After the operation severe pain persisted for some hours, but then entirely subsided. Healing took place by first intention. As two months have now elapsed since the date of operation and the pain has not returned, it may be hoped that the favorable result will become a permanent one Sensibility, moreover, is becoming reëstablished in the part. Dr. Gersung has postponed the publication of the case, because he wished to observe whether complete sensibility would return; he hopes with confidence that this will be the case. The ultimate result will be awaited with great interest; for if it is as favorable as now appears probable, Dr. Gersung's recommendation that the operation should be given an extended trial will doubtless be widely acted on.—*Brit. Med. Jour.*, May 19, 1888.

Pathology and Treatment of Pertussis.—Dr. Edmund Wendt draws the following conclusions at the close of a paper on this subject:

1. There is constantly associated with whooping-cough a special microörganism, discovered by Afanasieff.

2. This microbe is a small bacillus, having properties that distinguish it from all other known bacteria.

3. The "bacillus pertussis" (*bacillus tussis convulsivæ Afanasieff*) can be readily demonstrated in the sputum of patients having the disease.

4. While its etiological significance appears established, it does not possess much diagnostic importance, since it is found only after the clinical features of the disease are already well marked.

5. The treatment of pertussis has not yet been materially advanced by this discovery.

6. Antiseptics locally applied do not appear to shorten the duration of the disease.

7. Hygiene and judicious alimentation are, in the present state of our knowledge, of, at least, equal importance with medicinal treatment.

8. Antipyrin and the bromides are reliable symptomatic drugs, and are devoid of danger.

9. A specific has not yet been found.

10. Abortive forms of pertussis may occur, but no plan of treatment now known can claim to have abortive efficacy.

Although I have deprecated the habit of recommending particular drugs on the strength of gratifying personal experience, I cannot refrain from alluding to the use of antipyrin in pertussis. Dr. Sonnenberger,[1] of Worms, was the first to call attention to this new drug in the treatment of whooping-cough. He claimed such surprisingly good results from its employment that my sceptical faculty was immediately fanned into activity, Nevertheless, so far as my own limited experience goes, I must own that antipyrin has with me a better record than any other one drug. I can claim no cures from antipyrin. But what the drug has appeared to me to favor, was an easy course of the disease to final recovery, a mitigation of the paroxysms, especially at night, possibly a reduction in their numbers, and certainly a freedom from complications. This is higher praise than I can conscientiously bestow upon any other method of treatment. But I am far from claiming as much as Sonnenberger, for antipyrin, that author asserting it to be distinctly curative. As to the method of its employment, I have followed the directions of Sonnenberger, who gives one-seventh of a grain to very young children, and gradually increases the dose according to the age of the child. To adults he gives fifteen grains. The medicine is administered three times daily, and sometimes once during the night. Children take it readily when dissolved in a little water and raspberry syrup. The remedy should be continued throughout the attack.—*Medical News*, June 2, 1888.

The Blood in Diabetes.—Lépine has recorded a case of diabetes which terminated fatally in coma, and in which, for the first time, it was positively shown that in this state the blood loses its alkaline reaction (*Revue de Médecine*). As far back as 1883, at the debate on diabetes at the Pathological Society, Dr. Ralfe first drew attention to the fact that the symptoms of diabetic coma were not unlike those produced in animals poisoned by an injection of acids into their veins, or whenever attempts were made to diminish the alkalinity of the blood by other means; whence the speaker inferred that the poison concerned was of an *acid* nature, which by decomposition in the urine became converted into acetone. This idea of "acid intoxication" has since been generally adopted, and Minskowski has discovered the presence of an acid (oxybutyric) in diabetic urines which is capable of breaking up in aceto-acetic acid, and thus furnishing acetone. This acid does not, perhaps, exist in the blood and tissues in a free state, but is probably combined with some base with which it forms an acid salt. In Lépine's case, intravenous injection of a saline fluid containing about an ounce

[1] Deutsche med. Wochenschrift, April 7, 1887.

each of sodium chloride and sodium bicarbonate to three pints of water was employed when the coma first set in. After this there was some immediate improvement from the coma, the pulse rallied, the temperature rose from 96° to 97.5° F., and the patient could speak, but not swallow. Twelve hours afterward venesection was employed prior to the trial of a fresh injection, when it was found that, in spite of the previous injection of a large quantity of alkali, the reaction of the blood was neutral—a clear proof, Professor Lépine thinks, of the acid nature of the disease, and its power to destroy the normal alkalinity of the blood. It may be a question, however, says *The Lancet*, whether the injection of an alkaline bicarbonate into the blood in diabetic coma is a right procedure. For, though the reaction of the salt is alkaline, yet its constitution is acid, and, as Dr. Ralfe pointed out some years ago, probably acts as an acid salt in its decomposition with other salts in the body, and so actually tends, after the immediate effect of its alkalinity has passed off, to diminish the alkalinity of the blood. Should this, on further inquiry, prove correct, it might be advisable to employ neutral sodium phosphate instead of the acid sodium carbonate for intravenous injections.—*Medical Record*, June 2, 1888.

THE CORRECTION OF NASAL DEFORMITY BY MEANS OF PLASTIC OPERATION.—DR. OBLINSKI, of Krakau, in his paper refers more particularly to deformities resulting from loss of the cartilaginous framework of the nose. Dieffenbach treats this class of patients superficially, recommending the division of the cicatrices, which deviated the point of the nose, by means of a tenotone, and the filling of the nares with lint. This method gives only temporary relief.

In a girl, æt. 16, Prof. Oblinski found the following deformity: The tip of the nose, as a result of the destruction of the cartilaginous septum, was sunken in; on each ala nasi there was a deep longitudinal groove, formed by cicatricial tissue, dividing the lower half of the nose into three spheroidal growths, which eventually would completely obstruct the nares. At the upper end of the right sulcus there was seen an opening through which the air entered into the nostril. The author, after completely cutting out the right groove with its cicatricial tissue, and also incising the opening in its upper extremity, replaced the gap thus left by an oblong flap from the cheek, cut from the upper end of the right sulcus. The flap was 2 cm. long and 1 cm. broad and easily filled the gap. Primary union occurred. The left sulcus was also excised in the same manner, and replaced by the oblong cheek flap. The cosmetic result was satisfactory. The tip of the nose was well raised. The author recommends, however, a larger flap in the future, thus allowing for subsequent contraction.—*Deutch Zeitschr. f. Chir.*, Band 24, heft 1–2.—*Annals of Surgery*, June, 1888.

CLEANSING THE HANDS.—DR. VOGEL, of Eisleben, says that he has noticed that coppersmiths, tinsmiths, etc., whose hands become covered with dirt from working in oxides and acids which cannot be removed by ordinary means, first rub their hands with warm oil and then, when this has thoroughly penetrated, with powdered borax. Subsequent washing with soap and water makes the hands perfectly clean. He advises those who have to use carbolic acid to go through the process above described first, and claims that in this way (1) disinfection is more thorough; (2) the hands are made purer than it is possible to make them by soap alone; (3) the hands remain soft and free from rough epidermic scales, and the odor of carbolic acid is destroyed; (4) the uncomfortable anæsthesia of the hands, after washing with carbolic acid, is avoided.—*Druggists Circular*, June, 1888.

MECO-NARCEIN.—DR. LABORDE has called the attention of the French Academy of Medicine to the valuable soporific qualities of a product derived from opium, to which he proposes to give the name of meco-narcein. Narcein as ordinarily prepared is comparatively insoluble, and therefore has very little physiological effect. He has succeeded, however, in obtaining a product quite free from morphine, and consisting of narcein mixed with various unknown alkaloids. A fifth of a grain induced a calm sleep in a dog weighing thirty pounds, without any apparent after-effects. It would appear to be devoid of the preliminary exciting effects of morphine, and does not derange the digestive apparatus. Dr. Laborde recommends it in the treatment of insomnia of nervous origin, in broncho-pulmonary affections characterized by cough and excessive secretions of mucus, and finally in morphinomania.—*British Medical Journal*, May 26, 1888.

SURGICAL TREATMENT OF DEPRESSED COMPOUND FRACTURES OF THE SKULL.—MR. LAWFORD KNAGGS reports a case (fatal) of compound depressed fracture of the parietal bone, and calls special attention to the following points in the treatment of these cases: 1. The value of the large flap over the crucial incision. 2. The advantages to be derived from a free removal of bone. 3. The desirability of thorough exploration, even by means of a flap of dura mater, in cases where that membrane is injured. 4. The great importance of thorough cleansing with powerful antiseptics, even of the cerebral substance itself in suitable cases, and of endeavoring to secure from the commencement complete asepsis.—*Lancet*, March 17, 1888.

TANNIN WOOL.—DR. RICHARDSON describes in the *Asclepiad*, a preparation designated tannin wool, which he recommends as being of great service in treating ozæna and other diseases attended with fetid odors. It is said to be a ready styptic and to possess good antiseptic properties. It is prepared by adding pure cotton wool, bit by bit, to a saturated solution of tannin in distilled water, at 140° F., until all the solution is taken up; then drying the wool slowly in an evaporating dish. It should be kept in a closed bottle in the rough state, and teased out when required for use.—*Druggists Circular and Chemical Gazette*, June, 1888.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, JUNE 9, 1888.

PENNY WISE—POUND FOOLISH.

A person who has misappropriated the *nom de plume* "Justice" has published under the auspices of the "Tax Reform Association of Chicago" a pamphlet entitled: "Extravagance is the Cause of the 53 cent State Tax in Illinois." Comparative statistics are pointed, showing the expenditures of various departments of the State Government, including among others the State Board of Health. It appears from the figures quoted by "Justice" from the reports of the Auditor of Illinois that the expenses of the State Board of Health for 1878 were $1,669,15, while for the two years ending September 30, 1886, they were $29,841,87. "In what way" then asks the writer anent this obvious increase of expenditures "were the people of the State compensated for this outlay of money? The truth is," "Justice" continues, "there is no necessity for the existence of this Board under the pay of the State. There might as well be a State Board of Lawyers to see that none but competent men practice the profession of law."

It may be true that in Illinois taxation by the State Government is excessively high, and it may even be a fact—which "Justice's" pamphlet was intended to show—that such excessive taxation has been due to the predominance of a particular political party in the management of the State Government. Whether true or not, the matter is not one that concerns us as medical men. But in the sanitation of the State, and in the protection of the public health, we have an interest greater and more direct than the mere mercenary considerations connected with tax-paying. And having some familiarity with the problems that come before a body like the State Board of Health, as well as with the needs of the public, and the necessity of protecting public health, it is only just to the people and to the State Board of Health that the attack of "Justice" should receive more than passing mention at our hands.

The suggestion of a State Board of Lawyers is a little unfortunate for "Justice;" it weakens rather than strengthens the argument, for it is by no means certain that such a Board might not render the legal profession and the people generally invaluable service if it existed. The better members of the Bar admit that of late years not a few of their profession have constituted something not far from a pestiferous public nuisance. There are members of the Bar that do but little business besides procuring divorces, bribing juries, corrupting legislators, promoting litigation, swindling the ignorant and confiding, and defrauding even the strong and well-informed. There is scarcely a corporation but has its "attorney" to engineer projects that cannot for a moment bear the light of investigation, and never is a member of the "wealthy criminal class" unable to secure the services of "distinguished counsel" in the execution of any nefarious scheme that can be cloaked and garmented in the forms and phrases of the law. A State Board of Lawyers, clothed with sufficient power, and having enough conscience and backbone to undertake the herculean task of reforming the Bar, might therefore do effective service in excluding quacks from the legal profession, and purifying the morals of some that would be left.

But "Justice's" fundamental error seems to have been in overlooking the fact that the State Board of Health does a far greater work than that of being merely an examiner of applicants for admission to practice medicine—though its work in performing this duty alone is of some value in saving the public from incompetent practitioners and quacks. That the sanitary work of the Board far exceeds the amount and importance of its work as an examining and licensing body, "Justice" could have perceived—had she not been blind by reason of having the mythical scales over her eyes instead of in her hands—by considering the items making up the expenditures of the Board. In the *two years* ending September 30, 1886, Dr. Clark, Kreider, Ludlam, Bateman, McKenzie and Haskell received for "expenses as members" $625.36. In this time these gentlemen attended not less than eight meetings of the Board, for which the amount each received averaged $105, or about $13 apiece for each meeting; clearly not an extravagant price. Other items were: vaccine points

$217.28; vaccinating negro paupers to prevent spread of small-pox $100; chemical examinations in the Momence meat-poisoning cases and of Chicago water-supply $550; expenses of a member of the Board in connection with the Momence meat-poisoning case $100; expenses of a member of the Board for visiting a man affected with glanders $22.70; detectives for services in investigation $38.05; Secretary for expenses in investigating and preparing for prevention of epidemics and contagious diseases $1,878.53. We also find that in the two years the Assistant Secretary was paid $2,400 for salary, and $1,271.50 for clerical services—$1,835.75 a year; other clerical services for the two years amounted to $6,708.63—$3,354.31 a year; incidental office expenses for the two years $2,959.36. Thus far there is no "unnecessary and extravagant use of public money," and we have a total of $16,471.41. The remaining items of expenditure were for messengers, janitor, merchandise, attorney's fees, secretary's salary, and stationary, printing and binding, which last three items amounted to $5,973.46. If there was any waste of money in these items it was due to the awarders of the contracts to the "State printing ring," not to the Board of Health.

"Justice" further complains that the Secretary of the Board paid himself $10,837.89. He did nothing of the kind. Of the amount thus figured $2,959.36 have been included above as office expenses for two years, and $1,878.53 have been accounted for under the necessary traveling expenses of the Secretary to provide against the importation of disease into the State. Is he to pay his own expenses when on such business? The remainder of the amount "paid himself" was $6,000 for salary in two years. Certainly no one will say that this is a princely salary. The Secretary of the State Board of Health receives less salary than any of the three State Railroad Commissioners. "Justice" is singularly silent concerning this Board of Railroad Commissioners. Theoretically it constitutes a body of railway experts; practically, as any one may see from the "Reports," it is officered by men that have not even an elementary knowledge of the practical art in which they are supposed to be experts; and for their "time" they receive $3,500 a year, the three thus taking $10,500 from the treasury of the State. It has not been very long since one of them was heard to say that he was "not losing any law practice by the time that he gave to Board." If "Justice" be bent on reform of State taxes this incompetent trinity furnishes ample scope for the practice of economy.

"The truth is," says Justice, "there is no necessity for the existence of this board under pay of the State. . . . In what way were the people of the State compensated for this outlay of money?" Is "Justice" a recent importation into this country and State, or has she yet to hear of the smallpox epidemic of 1880–82 in Illinois? Does she know that the Illinois State Board of Health warned the people in March, 1881, of the threatened danger, when smallpox was at less than half a dozen points outside of Chicago, and urged vaccination and revaccination; that little heed was given to this first warning; that after September, 1881, the epidemic spread to 77 of the 102 counties of the State, causing an aggregate of 8,856 cases, 2,978 deaths, and a loss of $4,403,968, exclusive of the actual value of human life lost and the disabled condition of many of the survivors; that by January 24, 1882, the epidemic was at an end, chiefly through the labors and efficiency of the State Board of Health of Illinois; and that this action of the Board caused a saving, outside of Chicago, of 1,517 cases, 320 lives, and more than $2,790,000 (exclusive of actual life-value); enough to pay the present expenses of the Board for about seventy-five years? Is it not perfectly clear that the present expenditures of the Board are less than 2 per cent. of the amount saved to the State and the people in 1882 by its vigilant and efficient Board? If "Justice" wishes to see the figures upon which these statements are based, they can be found in the "Fifth Annual Report of the Illinois State Board of Health," pages 218–20.

No epidemic of any kind has ever been so widely and so intelligently observed as that of which we have just spoken; and the records of the observations, which cover 125 pages of the "Fifth Annual Report," are of very great value to the people, the taxpayers, not only of this State, but of every State in the Union, and will continue to be of value for years to come. And if the lesson taught by that epidemic, and by its extinction mainly through the efforts of the State Board of Health, be heeded by the people of this State, they will be free from further invasions of this kind, and will never regret paying the Board a small percentage on the amount it saved six years ago, to say nothing of the actual dollars and cents saved by it since that time.

"Justice" has something to say, in the same connection, of the National Board of Health. Every one that has looked into the subject knows that this very necessary organization was rendered inefficient, and finally killed, by act of Congress—by the "penny wise, pound foolish" notions (not ideas) of legislative

"Justices." Notwithstanding the fact that cholera and yellow fever have cost this country more than a thousand million dollars, exclusive of the actual value of thousands of lives, in spite of all the light of experience, and of all the easily accessible literature that proves conclusively the absolute necessity of a National organization to coöperate with the State Boards of Health in protecting the people from imported death, there may yet be found a person to write a dime pamphlet in which it is gravely asserted that a State and a National Board of Health are sources of "unnecessary and extravagant expenditure of the people's money."

Until "Justice" has succeeded in abolishing the Board of Railroad Commissioners, or in officering it with competent and efficient men, so that the results of its labors will bear a comparison with, rather than be a contrast to, those of the State Board of Health, she had best "sing small"—if indeed she would not render more efficient service to her "Association" by maintaining a discreet silence.

THE HEREDITABILITY OF HEART DISEASE.

There is a popular belief that heart disease, in its generic sense, can be inherited. Hence many individuals whose parents, one or both, have died of some cardiac affection, are haunted by the dread of the ultimate development in themselves of the same disease.

There is considerable vagueness of ideas, and even a looseness of expression among medical writers concerning the inheritance of disease; as, for example, when congenital syphilis and cancer are both classed as hereditary. In a strict sense the former is inherited, since it is transmitted as such from parent to offspring; whereas the child of cancerous or tuberculous progenitors receives a certain predisposition to disease. He inherits a constitutional defect which renders him peculiarly liable to develop the cachexia of his immediate ancestors, but until it is developed, he is the subject of a diathesis. The diathesis is hereditary in this case, and hence, when the constitutional tendency has borne its legitimate fruit, the disease may be said to be hereditary.

However desirable it might be to hold to so rigid an interpretation of inheritance as opposed to constitutional predisposition, it is impracticable to do so, and one must content himself with the decree of custom. Therefore, although hereditary syphilis is congenital, other diseases accounted hereditary are not necessarily congenital, as, conversely, all congenital disorders are not inherited.

An hereditary disease, therefore, is one that develops in the offspring as a consequence of a special tendency imparted to the embryo by either the paternal or maternal element, or both, the impression thus made being so strong that the ultimate appearance of the disease, under favorable conditions, is almost an unavoidable certainty.

In accordance with this definition, the hereditability of heart disease depends upon the answer to the query whether or not there can be discovered in families a definite hereditary predisposition to cardiac disorders? Assuredly no one would venture to assert that, because the parent dies of some cardiac lesion, the child is likely to die of it in turn. Yet there is a consideration which should be taken into account in making a prognosis of that child's future health, and is of no small importance to life insurance companies. This is that, although there may not be so striking a predisposition to heart disease as to constitute a diathesis, still there may be some tissue weakness or susceptibility that renders the heart the *pars minoris resistentiæ*. This would seem not improbable if heart disease had existed in several successive members of a given line of ancestors, or been developed in a considerable proportion of the children of a given family. To be specific: if a mother dies of valvular disease induced by inflammatory rheumatism, and all four daughters bear evidence of the implication of the same set of valves, in consequence also of rheumatism, does it not look as if there were a family susceptibility to the same morbific influence? An objector may urge that in this instance the susceptibility can be said to apply only to the rheumatic poison, and that the development of valvular disease is but incidental. True, but the percentage of cases in which endocarditis is developed in the course of rheumatism is comparatively small. Whereas in this family all five individuals attacked by rheumatic fever are left with valvular lesions. Would any physician ignore such a history in treating one of the family for an attack of inflammatory rheumatism?

There are other forms of heart disease, however, in which an inherent tendency seems to play a more active part. These are fatty degeneration and the varieties of cardiac decay dependent upon and associated with arterio-sclerosis. Obesity is often a family trait, yet all such families do not present equal liability to fatty heart. Again, in certain families there is an unmistakable proneness to atheroma, as, according to Fothergill, is so often seen among sturdy Yorkshire squires. Yet in some, the heart is the first to give out, and sudden death from cardiac failure overtakes member after member;

while in other families cirrhotic kidneys are the rule.

The death of Mathew Arnold is a case in point. He died suddenly in consequence of some heart disease, for which Sir Andrew Clark is reported to have treated him for years. We have seen no statement as to its exact nature, but there is a fact in his family history, which, according to the theory of hereditary predisposition, ought to aid one in forming an opinion as to its character. His father, Thomas Arnold, of Rugby, died at the age of 47, during his second attack of angina pectoris, and at the autopsy, his heart was found to be fatty throughout in consequence of insufficient nourishment, since, it had but one coronary artery, and that a small one. Now, if this fact be coupled with that of his son's sudden death, at the age of 66, the inference seems forced upon us that Mathew Arnold's disease was also one of muscular degeneration of the heart, and not valvular. Should this conclusion prove to be correct, it would appear to strengthen the theory of the hereditability of such forms of heart disease.

We believe in hereditary tendencies more widespread than are capable of satisfactory scientific demonstration, and hence, although in the class of cases in question a predisposition is oftentimes too weak to warrant the term hereditary, still we are of the opinion that such a predisposition does exist. It differs from that of tuberculosis, etc., only in degree, not in kind. Facts on all hands go to prove that in each individual there are certain constitutional peculiarities, congenital and not acquired, which govern not only the course and termination of disease, but likewise the susceptibility to its invasion. When such peculiarities are handed down from one generation to another, they become at length sufficiently marked to deserve the title hereditary. It is in this sense, therefore, that a hereditary tendency to heart disease may be established.

HOW TO LIMIT THE NUMBER OF MEDICAL COLLEGES, AND LESSEN THE CROWDED CONDITION OF THE MEDICAL PROFESSION.

The thirty-ninth annual meeting of the American Medical Association, recently held in Cincinnati, has received more uniform commendation from the medical press of this country than any preceding meeting for many years. Of the many good papers and addresses presented during the meeting, perhaps no one is deserving of more attention than the Address of the President, A. Y. P. GARNETT, of Washington, both on account of the subject and the distinct and emphatic manner in which the chief points of interest were presented. In THE JOURNAL, May 26, we took occasion to call the attention of our readers to what had been done in previous years, both by the Association and by conventions of representatives of the colleges alone, in regard to the adoption of a uniform and adequate system of medical college instruction, as recommended in the second proposition of the President's address.

His first proposition, that the Association appoint "a standing committee, to be called a Committee on Legislation, for each State, Territory, and the District of Columbia, to consist of five members of the medical profession in good standing, three of whom shall have no official connection with any medical school or college," has never yet been tried. The duties of the proposed committee in each State and Territory are "to attend the sessions of the respective Legislatures and use all honorable means looking to the reduction of the number of medical schools in the United States, and a consequent diminution in the annual number of medical graduates," by the passage of laws appropriate for the purpose; and for the creation of a Board of Medical Examiners in each State where such do not already exist, which shall be required to examine all applications for license to practice medicine in their respective States, etc. The objects sought to be accomplished by this plan are all commendable, but the plan itself appears to be unnecessarily complicated in its details, and without any provision for securing uniformity in the action and influence of the several State and Territorial committees. It would doubtless be difficult to find *five* competent and influential members of the profession in each State who, as a committee, would be willing to spend their time attending the sessions of the several legislative bodies, or who would be asking for the enactment of laws of the same import in the several States. The first and most important step towards the accomplishment of any desirable legislation, is to have a form of law, simple as possible in its details, but accurately adjusted to the accomplishment of that higher standard of both preliminary and professional education so much desired by all. This must be done by a committee, and then receive the cordial endorsement of the National Medical Association and of the several State Societies. It had been confidently expected that such a form of law would be presented by a committee in the Section of State Medicine at the recent meeting in Cincinnati, and if approved by the Section, then to be presented for the approval of the Association in general session. For some reason, the chairman of the committee failed to attend the meeting and

no formal report was made. The committee was continued with instructions to report at the next annual meeting. In the meantime the medical press should be rendering important aid by a candid and thorough discussion of the subject in all its bearings.

EDITORIAL NOTES.

NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.—At a meeting of the Board of Trustees of the New York Post-Graduate Medical School and Hospital the following appointments were made in the Faculty:

Abraham Jacobi, M.D., Professor of Diseases of Children; Robert F. Weir, M.D., Professor of Clinical Surgery; Peter A. Callan, M.D., Professor of Diseases of the Eye; L. Bolton Bangs, M.D., Professor of Diseases of the Genito-Urinary Organs and of Venereal Diseases; Joseph E. Winters, M.D., Professor of Diseases of Children; O. B. Douglas, M.D., Professor of Diseases of the Nose and Throat. Dr. William A. Hammond, being about to remove to Washington, has resigned his position as Professor of Mental and Nervous Diseases. Dr. Hammond was one of the founders of the school.

ARSENIC IN WINE.—About a month ago a large number of persons in Hyères, France, were poisoned by adulterated wine. Analysis has recently shown that the wine contained a large quantity of arsenic, added for the purpose of hastening fermentation, and considerable quantities of arsenic have been found in bodies of the dead exhumed for the purpose of analysis. A large number of the people of Hyères still present symptoms of arsenic poisoning.

ELEMENTARY RESPIRATION OF THE BLOOD AND TISSUES.—MM. GRÉHART and QUINQUAND have recently reported some experiments on this subject, a portion of them being made with the blood alone, the others with blood in which a certain amount of fresh muscle was immersed. Their experiments show that the blood is simply a carrier of oxygen, and that the blood globules, in so far as respiration is concerned, acts in the same way as the elements of the tissues.

WM. R. WARNER & CO. have issued the following notice to physicians:

"We take this method of denouncing the circulation of certain erroneous reports as being the outcome of either ignorance or malice. We have no connection with the firm of H. H. Warner & Co., of Rochester, who make 'Safe Remedies' and other patent medicines. Our advertising is to the Medical profession."

LEPROSY IN RUSSIA.—Leprosy is on the increase in the Baltic provinces. In Lithuania there are from 250 to 300 lepers; in the district of Dorpat it is estimated that there are 10 lepers to the 1,000 inhabitants. It is now demanded that the government name a commission to study the best means of combating the spread of the disease. A special hospital for lepers is to be founded at Riga, to accommodate 40 patients.

PHYSIOLOGICAL ANTAGONISM.—M. CHOUPPE claims that the action of strychnine is hastened by antipyrin, whether the latter be administered before, at the same time with, or after the strychnine. By placing animals under the influence of acetanilide he has antagonized the effects of very large doses of nicotine given afterwards.

SOME MEMBERS of the American Medical Association purpose leaving about the middle of July to attend the meeting of the British Medical Association at Glasgow in August. For further information, as to rates, etc., address Mr. Chas. Truax, 77 Wabash Ave., Chicago.

TRICHINOSIS IN GERMANY.—For the third time this year trichinosis has appeared in Saxony, at Niederplanitz and Neudörfeld, near Zwickau, where there were about 80 grave cases on May 23.

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, April 11, 1888.

THE PRESIDENT, J. SOLIS-COHEN, M.D., IN THE CHAIR.

DR. JOSEPH PRICE read

A REPORT OF THREE CASES OF OPERATION FOR STRANGULATED HERNIA.

Case 1.—Miss B., white, æt. 40, single, a patient of Dr. Dundore, had had a reducible inguinal hernia of long standing and had never worn a truss. In May, 1887, it became irreducible, and the bowels were completely occluded for three days. Well directed efforts to reduce failing, Dr. Dundore decided upon operative interference, and invited me to see her. The usual symptoms of a strangulated hernia were present, the abdomen being greatly distended and tympanitic.

Upon incision the bowel was found to be firmly adherent to the sac, requiring considerable dissection to free it completely. After severing the stricture, the bowel was pulled out for a few inches, and found to be completely occluded by bands of inflammatory tissue due to limited peritonitis at the point of stricture—the neck of the sac. These bands were broken

up by fingers, forceps, and scissors, which restored the calibre of the bowel and it immediately collapsed. The bowel was very dark in color until released from these inflammatory bands, when its color changed rapidly, and I decided the circulation sufficiently good to restore it to the abdomen. The canal was closed by buried silkworm-gut sutures, the incision with silk. Dry dressing; recovery.

Case 2.—Miss K., white, æt. 75 years, never pregnant, a patient of Dr. F. X. Dercum, who called me in consultation March 1, 1888. Found the patient in bed and very feeble, with a history of complete occlusion of the bowel for twelve days, and stercoraceous vomiting for eight days. The abdomen was much distended and tympanitic. There was a tumor the size of a hen's egg over the right femoral ring which presented no fluctuation nor other symptoms of local trouble. There was also a tumor over the left femoral ring the size of a goose egg, likewise presenting no symptoms of local trouble. The patient said the tumor on the left side had existed for eighteen years, while that on the right side was more recent, but also of several years' standing. Taxis failing to accomplish any results, operation was suggested as the last resort, and was performed the next day at the patient's request. As there were no symptoms specializing either ring as the site of the obstruction, and as the distension was so great that occlusion at some other point was feared, the incision was made in the median line. Examination now revealed that the tumor on the left side was not a hernia, but either a hydrocele of the canal of Nuck, or an old hernial sac that had become cystic. The gut was incarcerated at the right femoral ring, and very firmly adherent. Fearful of tearing the intestine, I made another incision over the tumor, and was compelled to dissect the intestine from its sac. The intestine was then drawn through the median incision and carefully examined. It was found to be greatly congested, but speedily cleared, and was returned to the abdomen. The neck of the sac was twisted upon itself, and transfixed by deep buried sutures of silk, and stitched to the edges of the ring, the canal being closed by deep silk sutures. The median incision was closed with silk sutures. Dry dressings. The bowels moved spontaneously the same evening, and the patient recovered without a bad symptom. Stitches were removed the tenth day.

Case 3.—Operation for ventral hernia. (By Dr. Joseph Hoffman.) Mrs. M., æt. 58, married at 19, ten children, four miscarriages. She first noticed the rupture about fourteen years ago, when it was the size of a thimble. She in no way attributes the origin of the rupture to childbearing, which, since she is a large, heavy woman, weighing about 190 lbs., and having a great pendulous belly, would at first suggest the probable cause. The cause to which she attributes the hernia is a rather singular accident. Being, as has just before been stated, a large woman and her belly pendulous, when lying on her side, the abdominal walls, lax and flaccid, lie loosely on the bed. One night while in this position, at the side of her husband, he turned in his sleep, and in so doing put his elbow directly upon her belly, forcing, as seems probable from her story, the two recti muscles apart. At any rate, from this time on she suffered discomfort, a burning sensation, and finally the hernia appeared. Her husband being a cripple and a fruit dealer, she was accustomed to help him by carrying his baskets from the market, by this means her trouble grew worse. Two or three years after its first appearance she was suddenly taken ill, her bowels refusing to move. Finally, after taking forty cents worth of castor-oil, a movement was secured with great suffering. After this she had a second violent attack in about a year, and from this time on she has had attacks at intervals of about four months, till the time at which Dr. Price and myself operated on her, the last of August. During this period she was seen by six or eight physicians, most all of whom described her trouble as "twisting of the guts," but operation was never suggested. Cathartics were administered to her each time she was attacked, no physician seeming to recognize the fact of their danger, one excepted, who also finally ordered them. At her first attack, it has been omitted to state that she was given up to die. In all she had ten or twelve serious attacks. At her last seizure, in August, 1887, after efforts to secure two other physicians, she came for me. I found the woman in extreme pain, she had not vomited. Examination was made and the hernia discovered above the umbilicus, about the size of a pint tin-cup or larger, very tympanitic and hard. Application of hot poultices was ordered, and a hypodermic of ½ gr. of morphia given. The next morning she was much relieved, the tumor smaller, and altogether she was very comfortable; so much so, indeed, that I omitted my visit the day after. The next, the fourth day, I again visited her, and to my dismay found her vomiting stercora. This was all the more astonishing because I had not been informed of any change for the worse. I at once administered a second hypodermic of morphia, and went for the assistance of Dr. Joseph Price. After some delay I found him, and we operated at once. An incision about 6 inches long was made over the hernia. The integument was very thin, and extreme care was necessary to avoid cutting through the intestine. On getting through into the peritoneum we found it so much thickened that it was at first impossible to distinguish between it and the gut. It was finally differentiated and carefully dissected free from the gut, to which it was closely adherent. The guts, too, in the sac were closely adherent, and separated with difficulty. The sac was tied off and removed. The distension of the bowel disappeared at once on its being freed. The strangulating portion of the sac was so firm as to resist all efforts to stretch it, and only by the utmost care was the bowel released, grasped as if it was in a vise. About 10 inches of the large intestine were found in the sac. This portion was very dark, but not gangrenous. After its release, the gut was carefully washed and returned. The incision was closed by deep and superficial sutures, all of silk. The catgut we happened to have was too slight to withstand the great strain put upon it by the enormous belly walls. Indeed, the silk was little better, for having been so long in antiseptic so-

lution it had become rotten, and was thoroughly untrustworthy. I was unfortunate, too, in the breaking of the curved needles which, having been made for the Hagedorn holder, were not fitted for an ordinary instrument. The operation was, however, completed. The woman made a rapid recovery, and in three weeks was up, and stated herself more comfortable than she had been for fourteen years.

The incision did not suppurate worth the name, and closed promptly, though not smoothly.

Examination to-day finds the patient entirely comfortable, though the recti have again separated. She wears both a band of rubber adhesive plaster and a muslin bandage. Is entirely well. Her belly bandage is 50½ inches in circumference.

DR. JOHN H. PACKARD thought: The amount of material presented for discussion in the papers read is so large that it would be difficult to do it justice.

In connection with the cases of hernia reported, he briefly mentioned another, in which an old femoral hernia was subjected to unjust suspicion. The patient, a woman, about 50 years of age, was brought to St. Joseph's Hospital with intestinal obstruction of four day's standing; her general condition was bad, and she had fæcal vomiting. She had an old left femoral hernia, which had given trouble on several occasions, but had always been successfully reduced. This was cut down upon, and the sac found to be empty. Laparotomy was at once performed, a twist of the small intestine being found and relieved, flatus was discharged per anum, and the intense congestion and distention of the bowel relieved so that the mass was easily returned. In spite of vigorous stimulation hypodermatically and by the mouth, the patient sank, and died in about six hours. In this case, which will be elsewhere reported more in detail, an earlier operation would probably have had a different result.

As illustrating the difficulties attending the diagnosis of abdominal tumors, a case may be mentioned which occurred at the Episcopal Hospital some years ago. A man was sent down from the medical to the surgical ward to be operated on for an apparently movable tumor situated on the left side of the belly two inches below the level of the umbilicus. It was found, however, that the mass was firmly adherent to the parietes, and the operation was abandoned. The man died a few months later, and an autopsy showed that the disease was epithelioma of the pylorus, which had in some way become displaced and fastened by peritoneal adhesions in its abnormal relation.

The seat of pain is very deceptive as an index of the actual lesions in these cases. A woman who was brought to the Pennsylvania Hospital in 1886 on account of a gunshot wound, complained of pain in the right iliac region only, yet the ball had ranged upward from the left loin to near the right axilla, wounding the pleura, colon, stomach, liver, right internal mammary artery, and right breast.

DR. WM. GOODELL: Some two years ago I operated, performing a double ovariotomy. The cysts were colloid, and there was no indication of malignancy. About a year afterward, the patient then being apparently well, she fell in getting out of a carriage. There was pain in her right side, considered by her attending physician in the country to be an attack of peritonitis. The pain afterward shifted to the left hip, growing worse and worse. She was brought to me again and I examined her with the utmost care, feeling sure, from the symptoms and from the emaciation that had occurred, that there was malignant disease. I thought that perhaps the stump of the ovary had taken on malignant degeneration. Finding nothing, I called in a distinguished specialist, who twice examined her under ether, but failed also to detect a cause for the pain. The actual cautery was applied along the course of the sciatic nerve, to which region the pain was referred. Death took place in a few weeks, and at the autopsy, which was requested by the lady before her death, disseminated metastatic cancer of the liver was found. Clearly the ovarian disease had been malignant in the beginning, and was the focus from which sprang the hepatic disease. But the salient point here is pain apparently in the sciatic nerve, while the site of disease was the liver.

A few words as to Dr. Barton's case.[1] The patient died probably from acute septicæmia. I have seen so many cases of burst cyst recover, that I have ceased to regard the acident as dangerous unless the general health has deteriorated from chronic absorption of septic material. Of course, this may occur. My last case failed to rally, and died on the seventh day from sheer exhaustion. The rupture had occurred some weeks before from a fall, and the vital powers were slowly impaired, as if by chronic poisoning. Here every abdominal organ was infected and she was greatly emaciated, and also bedridden.

On the other hand, I was surprised to-day by a visit from a patient upon whom I operated not quite two years ago. She had been tapped by a prominent physician in New York, who was unable to remove the fluid because it was colloid. A few weeks later I saw her. She was then very weak and emaciated and confined to her room. At the operation it was discovered that the cyst had ruptured and that every organ was either affected or infected with colloid. Even the skin and the abdominal wall were infiltrated with it where the trocar had entered. I thought she would recover from the operation, but expected death in a few weeks from progressive colloid infection. She was in blooming health when she called on me to-day, and had gained forty pounds.

With regard to the prognosis in these cases of burst colloid cysts, I hardly know what to say. I have seen cases remain well as long as three and four years, and then the disease returned in some other organ. On the other hand, I have had a fatal return in a few months' time. When we open an abdomen and find the whole peritoneum roughened with miliary prominences or with papillary excrescences, are we dealing with a benign or with a malign disease? This is the important question, for on it hinges the prognosis; yet I am unable to answer it.

The apparent improvement after exploratory laparotomy referred to this evening, especially in bleeding

[1] THE JOURNAL, April 28, p. 518.

fibroids, I have met with several cases, and it is mentioned by others. I cannot explain it. Possibly the irritation from the operation causes uterine contraction, or sets up some change in the circulation.

I think that Dr. Barton removes his stitches too soon. I used to remove them in five or six days. But some years ago a wound, after ovariotomy, reopened and there was considerable oozing of serum. The patient recovered, however. I then allowed the stitches to remain seven full days. In a case of laparotomy in which I had removed the stitches on the eighth day, the patient, who was doing well, got some hot tea into her windpipe on the tenth day, and in the paroxysm of coughing the wound reopened. I had much difficulty in returning the distended bowels, and she died in two or three days apparently from shock, and not from inflammation. Two or three months ago I opened an abdomen to remove the ovaries for a fibroid, under a distinct promise not to touch the tumor. I could not get at the ovaries they were so imbedded in the tumor, and I accordingly closed the wound. On the ninth day the stitches were removed. A few days later, through some imprudence of the patient, the wound burst open to the whole of its length. My son closed it, and the woman barely escaped with her life. In such cases I shall in future leave the stitches in for at least two weeks.

A word as to the use of ether: I had nineteen cases of oöphorectomy last year, with one death. In that case the operation was very easy, yet suppuration of urine followed and the patient died from uræmia, which I attributed to the ether. As symptoms of kidney disease were not manifest before the operation, I omitted to examine the urine. Yet serious renal lesions must have existed, and I cannot but think that her life would have been saved, had chloroform been used as the anæsthetic.

I was interested in Dr. Keen's paper,[1] for the case was my first one of oöphorectomy and the operation was performed *per vaginam*. The operation was not difficult, although the vagina was small. There were marked nervous symptoms after the operation, but no inflammation. The lady had been a patient of Dr. Weir Mitchell for rest cure. She had excessive abdominal pains, profuse menorrhagia and metrorrhagia. Dr. Mitchell recognized a fibroid tumor and requested me to see the patient. The tumor was as large as an infant's head, and we decided to remove the ovaries. This was done on October 4. On November 20, the patient had been so much benefited that she walked two miles to church. She was in such a state of ecstasy over this, that her mother feared she would lose her mind. After that ill-defined pains returned, and there was some bleeding from the vagina. On December 17, I removed a painful neuroma of the cicatrix. The tumor was then reduced in size one-half. In March, 1878, the tumor had become so small that it gave inconvenience by coming down in the pelvis, bringing the womb with it, and I had to insert a pessary. On July 31, of the same year, I found the tumor merely as large as a horse-chestnut and springing from the right side of the anteflexed womb. In December she complained of occlusion of the bowel and bleeding at stool, which I attributed to piles. In 1880 there was more or less pain in the left hypochondrium, with more or less nervous phenomena. April, 1882, there had been two slight menstrual flows, with the usual molimina. Later on violent and repeated hæmorrhages from the bowel occurred, which were attributed by the patient to vicarious menstruation. For these hæmorrhages I removed, in February, 1884, a large mass of piles by ligation, and also stretched the sphincter ani for a fissure. Since then I have not seen the patient.

It is interesting to note the rapid diminution of the large tumor. From the size of an infant's head it was reduced in nine months to that of a horse-chestnut. Neurosis was one of the marked features in this case. The patient is excitable, nervous, and of rare intelligence. When I recall the relief after the first operation, her extravagant delight at walking two miles to church, and the fears for her reason, I must confess that I look for a return of the pain once more, for I cannot see the relation between a uterine tumor and a pain complained of high up in the left hypochondrium. The patient was also highly susceptible to certain drugs, and the only anodyne I could employ was cannabis indica in small doses.

DR. M. PRICE: In many cases it will be found that the cause of strangulation of the bowel is adhesion of the small intestine and bands of inflammatory lymph. The pressure and irritation set up slight peritonitis, and finally, adhesions. An early exploration will save life. Handling of the bowel and tearing the adhesions, or snipping them with scissors, will do no harm. Sometimes we cannot distinguish a mass of matted intestine from a tumor, as in the case of a little colored girl I opened the other day. By the time we had separated the adhesions and liberated the intestines there was no tumor. I think that in many cases a fatal result may be attributed to the opium treatment. If any one will employ Epsom salts immediately after the patient comes out from the ether, where he now uses opium, he will never regret it. He will regret the use of opium.

As to removing stitches, if we use silkworm gut we need not give ourselves any concern. They may be left in indefinitely if we choose. They will bear a strain of fifty or sixty pounds, and give no inconvenience of any kind.

DR. JOHN B. ROBERTS: The case of Dr. White renders it appropriate to refer at this time to the historic case of Dr. Levis, known as the "ethyl bromide death," which led to the abandonment of that anæsthetic in this city. The patient was placed under the anæsthetic for lateral lithotomy, for there were but three or four of us at that time in favor of the suprapubic operation. The skin was incised, but before anything more could be done the patient died. A larger, irregular stone, but smaller than this exhibited by Dr. White, was found wedged into the neck of the bladder. The kidney was not markedly diseased, as in Dr. White's case, but there was organic disease of it and of other organs. That death was as independent of operation, and may have been as independent

[1] THE JOURNAL, May 12, p. 580.

of anæsthetic as was that of Dr. White's patient. I think Dr. White is truly to be congratulated that he had not fixed the day of operation twenty-four hours earlier.

There is another point of interest in both these cases. Such stones can be much better moved by supra-pubic operation than any of the perineal operations.

Dr. H. A. Kelly: I had a case of referred pain due to the presence of fibroid tumors similar to that reported by Dr. Keen. There was much emaciation, constant cough, and a pulse of 120. She coughed whenever I touched the tumor. I performed hysterectomy, removing with great difficulty a mass of tumors, amidst which it was impossible to distinguish the uterus. The stump could not be brought up, and was treated intra-peritoneally. Cough has stopped, weight increased twenty pounds, pain is gone, and the patient is in the best of health and spirits.

The indications for the treatment of the various kinds and conditions of hernia are so different that it is difficult to discuss them together.

In one case, which I watched for years through many attacks, I finally made an autopsy. The patient was very fat and the intestines protruded in a large mass which could never have been returned to the abdomen which had so long been accustomed to their absence. The only operation possible would have been splitting the ring to relieve the tension. In this sac I found the colon and the vermiform appendix with small intestine.

I was called last fall to a case of strangulated umbilical hernia, and finding the patient collapsed and no time to be lost, instructed the husband to give chloroform while I operated with my pocket-case instruments. For suture I employed some embroidery silk lying on the table with which she had been making doilies. After releasing the intestines I split the ring and brought together the opposite side, thus obliterating the sac and curing the hernia permanently. The patient has remained well since.

The stretching of the scar in the so-called ventral hernia after laparotomy is not a true hernia and not liable to its dangers.

Three weeks ago I saw a man who had developed typhoid symptoms, followed by rupture and escape of fæcal matter from the scrotum, due to the strangulation of an old incarcerated hernia of 25 years' standing, caused by jumping down a cliff in the Fort Pillow massacre. The hernia was formed by a diverticulum from the bowel, and the whole mass, with the adherent sac, was one gangrenous mass which was removed in shreds, leaving a large opening in the bowel. I had no good available tissue to close this, and used his right testicle, which I fitted into the opening, and secured by a row of stitches around its circumference, being careful not to allow any stitch to penetrate the substance of the testicle. This has healed perfectly *in situ*, and the bowels have moved naturally and regularly. Some years ago Dr. Hunter reported a case to this Society, in which a man repeatedly pulled his testicle up to support and inguinal hernia, when to his surprise one day it stayed there, and finally became adherent, curing the hernia.

Dr. Keen: I think the difference of locality between lesion and pain, referred to so much this evening, will probably explain the pain in my case. I would like to ask Dr. Goodell which of the tumors in the specimen he would consider the original one?

Dr. Goodell: The intra-mural one, The great diminution would hardly have occurred otherwise.

Dr. Keen: A point elicited in our papers and discussion this evening is the reciprocal invasion of gynecological surgery by the general surgeon, and general surgery by the gynecologist. Nothing but good can come from this. It will be mutually advantageous.

Dr. Barton: I must bow to Dr. Goodell's authority in the matter of removal of stitches; and yet my own tendency, growing out of experience, is to take them out earlier and earlier. I think that by this I avoid suppuration. There is a difference between the lax abdominal wall after the removal of a thirty or forty pound tumor, and the tense condition of that wall after operations of the class I have been most engaged in. In these the great tension often causes suppuration if they are permitted to remain long. In order to afford support after removal of stitches I have been in the habit of taking two large pieces of adhesive plaster and cutting a series of tails upon each and fastening one piece on each side of the abdominal incision. These plasters are long enough nearly to reach the spine on each side, they are laced in front with heavy thread and are tightened as necessary by taking up the slack in the thread.

GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, March 23, 1888.

The President, Henry T. Byford, M.D., in the Chair.

(Concluded from page 663.)

Dr. J. C. Hoag read a paper on

SOME CONSIDERATIONS REGARDING DEATH OF THE FŒTUS IN UTERO.

A careful inquiry concerning the comparative frequency of premature expulsion of the impregnated human ovum can scarcely fail to surprise the physician, although anything like statistical accuracy in its determination is, for very obvious reasons, an utter impossibility. In making up an approximate estimate, one must needs remember that the impregnated ovum is often discharged at a menstrual period without the patient's knowledge of any unusual circumstance beyond an increase in the discomforts which often attend menstruation, and which are not infrequently attributed to trivial causes. To say nothing of the patient's ignorance, the physician himself is frequently unable to decide whether such an occurrence has taken place, even after an examination of the menstrual discharges.

Good authorities are of the opinion that we may safely reckon one case of abortion in the first months of pregnancy to every eight or ten cases of parturi-

tion at full term. Accordingly, the importance of careful study, to ascertain as fully as possible the proximate causes of this occurrence, cannot be overestimated, and still the writer believes that there is evidence of great apathy on the part of the profession in this respect, as evidenced in the very terms employed in classifying the causes of abortion. The convenient term "habitual abortion," for example, is one which cloaks a great part of our ignorance of this subject. Such an expression as "abortion from unknown causes," would at least be preferable as holding forth in its very confession of ignorance an inducement to explore its unknown depths.

As an example of the unsatisfactory state of our knowledge in this direction, one need only turn to the reports of large lying-in hospitals. In an interesting analysis[1] of two years' work in Prof. Gustave Braun's Clinic, 6,230 labor cases are reviewed. Premature labor[2] occurred in 565 cases, the causes being tabulated as follows:

Syphilis.....(about)	70
Pulmonary tuberculosis.....	9
Peritonitis.....	2
Other fevers.....	23
Faulty placental insertion.....	10
Vitium cordis.....	1
Injuries.....	7
Eclampsia.....	1
Induction of labor.....	4
Twin pregnancy.....	43
Total.....	170

This leaves 395 cases to be relegated to the category of the unknown.

In Braun, Chiari, and Spaeth's analysis of 7,835 cases of labor occurring in the Vienna Hospital for the year 1850–1851, 393 cases of premature labor are included. In only 126 cases, or one-third, could the cause be definitely determined.

Causes of the Premature Interruption of Pregnancy.—These may be considered as they relate, 1st, to the father; 2d, to the mother; 3d, to the ovum; and 4th, to traumatism.

Causes referable to the father.—These are constitutional vices, particularly those of syphilitic origin.

Causes referable to the mother.—Those include general and local diseases, climatic and hygienic influences, and finally certain idiosyncrasies which seem to be productive of abnormal irritability on the part of the uterus, even in the absence of recognizable lesions.

Causes referable to the ovum.—These comprise all diseased conditions of the fœtus and its appendages.

Traumatism includes accidents, efforts at criminal abortion, and the justifiable induction of labor.

In considering the subject of abortion in general, one can scarcely fail to be struck by the disproportionate frequency in multiparæ, and this seems clearly to depend on local diseases, such as endometritis, metritis, and uterine displacements.

With regard to diseases of the ovum I quote from Charpentier's work as follows: "Considered as a whole, the ovum represents a membranous sac composed of two membranes peculiar to it, the amnion and the chorion, and of one membrane of uterine origin, the decidua, a sac which contains the fœtus, the cord, the placenta, and the amniotic fluid. Each of these parts may be the seat of lesions constituting the pathology of the ovum."

If we exclude attempts at criminal abortion and the justifiable induction of labor, traumatism may be said to include only a small proportion of the causes of abortion; thus, in the two analyses above referred to, we find only fifteen cases referable to injuries in a total of 904 cases. These figures, would not, however, represent the proportion in private practice. But whatever may be the mediate causes of the interruption of pregnancy, the death of the ovum is almost without exception the immediate cause of the awakened uterine activity and the premature expulsion of the product of conception.

Death of the fœtus may be determined by disturbances of nutrition, due to faulty development of the ovum, and especially its appendages, which lead to abstraction from the fœtus of its supply of nutriment and oxygen. This may occur when the energy of growth in the membranes is so considerable as to unduly divert the blood supply to their development at the expense of the fœtus, or when suddenly or gradually the exchange of blood between the mother and the fœtus is obstructed or destroyed, the one condition prevailing in cases of inflammation of the membranes, which, when affecting the chorion, results in the formation of moles, the other when the uterine mucous membrane is the seat of the chronic inflammation known as endometritis decidua.

Again, the exchanges between fœtal and maternal blood may be impaired by maternal hæmorrhages, whether from the uterus or from other organs; thus, in cases of hypertrophic development of the tufts of the chorion, the fœtal vessels may be so compressed as to fill the maternal blood-spaces, as seems to be the case in syphilitic disease of the membranes. Extravasations from the placental vessels may also compromise the circulation of the fœtus, and when extensive cause its death. These extravasations may be produced by comparatively slight mechanical influences, in cases where the vessels have very thin and delicate walls, and particularly in cases of fatty infiltration consecutive to endometritis. Again, extravasations may be caused by local hyperæmia due to the abuse of alcohol, or to fever, uterine displacements or organic diseases of the heart, lungs, or liver.

As for syphilis, this may cause the death of the fœtus either primarily or secondarily. When it develops late in pregnancy, the fœtus may reach full term. When it develops earlier, it is much more likely to result in the interruption of gestation.

The point of this paper is to draw attention to the influence of endometritis, in determining the premature expulsion of the ovum. The great frequency of this disease is a matter of daily observation, and its influence in the production of abortion cannot be doubted. If a woman aborts frequently, we are apt

[1] Klinische Mittheilungen über Geburt u. Wochenbett, etc., aus den Jahren, 1881, u. 1882, von Dr C. Fürst.

[2] The terms premature labor, abortion, miscarriage, immature delivery, etc., are so variously used that the writer prefers to quote the exact expressions used by the different authors.

to say she aborts because she has aborted, she is the subject of habitual abortion. With this we content ourselves, whereas, no doubt, a careful study of these cases would often lead to the discovery of a pathological cause of remedial nature. That a lack of fecundity on the part of a woman is often due to an endometritis, and is overcome by a cure of the diseased condition, is a matter of frequent clinical experience. That systematic writers mention the rôle played by endometritis in the production of abortion, and mention the treatment of the disease as one of the prophylactic measures in the prevention of abortion, is of course, true, but it may be safely asserted that the great importance of this subject has not been sufficiently insisted upon, and that, if attention be especially directed to it, the causes and treatment of so-called habitual abortion will soon become much better understood.

In endometritis, extravasations into the hypertrophied tissue of the decidua often take place. If the disease is of moderate extent, or if it develops late in pregnancy, and does not involve the placenta itself, it may be borne without influence upon the development of the fœtus. If, however, it develops earlier or in a severer form, it may often compromise the life of the fœtus by leading to endometritis decidua with its hyperplasia, extravasations, and fatty infiltrations. If the placental decidua be involved, labor, when it comes on, is apt to be complicated by adherent placenta with its consecutive dangers. The frequency with which one meets examples of adherent placenta, in cases of labor which are otherwise normal, is to me a hint of a link connecting endometritis with abortion. The discovery of the true pathology of the puerperium has been one of the grandest life-saving discoveries of all times, and in the pathology of pregnancy we have a field which may be made productive of almost as rich harvests of human lives.

Report of Case.—I now offer for your inspection a specimen of macerated fœtus with its appendages. The patient who gave it birth was born in this State. She is 24 years of age, well-developed, weighing about 160 lbs., is strong, and claims to have enjoyed very excellent health for the most part. She was married three years ago, her husband being a skilled meshanic of exemplary habits and enjoying fairly good health. Seven months after marriage the patient gave birth to a macerated fœtus of six or seven months' development. One year later, this occurrence was duplicated. About a year and a half later still, she gave birth to the fœtus which you now see.

The placenta of the first fœtus was somewhat adherent, and did not come away entire. The patient spent two weeks in bed and, according to her own statement, was pretty sick. Subsequent to this she enjoyed good health until after the birth of the second fœtus, since which time she has not felt as well as before marriage.

A leucorrhœal discharge made its appearance after the birth of the second fœtus, and has continued most of the time to the present day, and since this event, her menstrual periods have been accompanied by pain, headache and fever. The patient has never flowed much during labor, and never at all during gestation.

My acquaintance with the patient began on the 28th day of last December, when I was informed that she had reason to suspect that pregnancy had been interrupted, and requested an examination. I had no hesitancy in pronouncing the fœtus dead, whereat she expressed great regret, saying she had long desired a child, and had believed that this time her hopes would be realized. The examination revealed a doughy condition of the belly, which was not distended in proportion to the supposed period of gestation. The position of the fœtal parts could not be made out. The os externum admitted one finger. A thick muco-purulent discharge, of disagreeable odor, was present in considerable quantity.

As regards subjective sensations, the patient said that the last fœtal movements had been felt four days before, and that they had grown gradually feebler before altogether ceasing. She had also experienced sharp pains in the abdomen, and had noticed a feeling as though the fœtus had turned over, such as is often described in connection with a dead fœtus. She had not, however, noticed the other sensations of mawkish taste in the mouth, languor, and a sensation of cold in the abdomen from stoppage of the fœtal circulation, and concomitant abstraction of heat from the uterus—a phenomenon, by the way, which has been made available as a diagnostic point in determining whether the fœtus has died or not.

I advised the patient that she might expect the expulsion of the fœtus in about ten days, and requested her to use the vaginal douche.

On January 5, twelve days after the cessation of fœtal movements, I found the patient in the second stage of labor, the pains having begun some hours before. I had barely time to offer support to the fœtus before it was discharged, with the membranes intact, the placenta soon following under the influence of gentle compression of the uterus. The placenta was intact, and labor ended with a moderate discharge of blood. With the exception of the presence of a small fresh coagulum on the surface of the placenta, a pale color, and considerable friability of its tissue, I could discern nothing abnormal in its appearance.

The fœtus itself is 14 inches long, and corresponds to the sixth month of development. It exhibits the usual appearances of maceration in the softening and separation of the epidermis, the dark discoloration of the corium, the flaccidity of the body, the separation of the cranial bones, and the looseness of the scalp. These appearances remain very much the same now as they were at birth, and you may judge them for yourselves.

Subsequent to labor the patient felt very well, with the exception of painful contractions of the uterus and distension of the breasts, conditions which received appropriate treatment. At noon of the sixth day of the puerperium, I was struck by the flushed appearance of the patient's face and, upon inquiry, found that she had awakened that morning with a severe headache; but it required additional interrogation to elicit the fact that she had also experienced

a chill (which she referred to as merely coldness of the feet), and some additional severity in the pains from uterine contractions. The temperature, which up to this time had been nearly normal, was now found to measure 100.5°. The lochia was somewhat fetid, but the patient said she had passed no clots whatever. A vaginal examination revealed a subinvoluted uterus. The patient accordingly presented every appearance of one about to enter upon childbed fever.

At 5 o'clock P.M. the temperature was 101.5°. With the assistance of the husband I placed the patient upon her side and, introducing a Sims' speculum, proceeded to thoroughly irrigate first the vagina and then the uterus with a carbolic acid solution, employing for this purpose the long glass fenestrated nozzle with double curve, and facilitating its introduction and the subsequent procedures by the use of the double tenaculum forceps. With a good-sized curette of a modified Sims' pattern, I next proceeded to scrape the placental site, with the result of bringing away what seemed to me an enormous quantity of soft pulpy material, composed almost wholly of fibrin and blood corpuscles, and which I now offer for your inspection. I estimated the total bulk of this material as about equal to the volume of a 3-oz. phial. At first I was unable to reach the fundus uteri with the instrument, but after repeated efforts, which resulted in bringing away consistent masses half as large as one's finger, I was able to reach every part of the endometrium. Every stroke of the curette dislodged masses of fibrin, but even after a most vigorous scraping the endometrium at the fundus had a rough, knobby feel.

Following the use of the curette with a renewed employment of the douche and placing some pencils of iodoform in the uterus, I arranged the patient comfortably in bed and was interested to measure her temperature. It had subsided 1.5°. The following morning I find the patient, after a good night's rest, with a normal temperature and feeling far more comfortable than at any time since her labor. The temperature remained normal for three days, when it exhibited a considerable exacerbation. I accordingly introduced a Sims' speculum again and thoroughly douched the uterus. The speculum was necessary, because I found it impossible to introduce even the convenient nozzle above described without it, and this leads me to remark, parenthetically, that after having employed the intra-uterine douche for nearly six years, I have reached the conclusion that it is occasionally quite impossible to administer it without the assistance of the speculum, and that unnecessary violence is often resorted to in attempting to introduce the nozzle. In my case, even with the speculum it was not easy to do so without the aid of the tenaculum. As a corollary to this proposition, I venture the assertion that the physician often deceives himself in believing that he has administered an adequate intra-uterine douche when, in point of fact, the nozzle of douche has barely entered the cervical canal. After the second and last douching, my patient made a rapid recovery.

In this case I am satisfied that neither the patient nor her husband has ever been the subject of syphilis. The patient herself has undoubtedly long suffered from endometritis, although this was perhaps not the occasion of her first mishap. I believe that a repeated application of the curette in this case and the additional application of topical remedies will effect a cure of the endometritis, and enable her to give birth to a healthy child, if she again become pregnant.

I have said nothing, however, as yet, with regard to another point which may have some bearing on the causal relations of fœtal death in this case. The patient has an abnormally slow pulse, the heart often pulsating as infrequently as forty-four beats to the minute. The relations of heart disease to pregnancy and parturition have been discussed by various authors, and Matthews Duncan[1] has suggested the possible influence of such diseases upon the production of abortion.

The more I use the curette in puerperal cases, the better pleased I am with it. I prefer an instrument with a large scraping surface and with a long shaft, set in a convenient handle. The presence of foreign bodies in the puerperal uterus is sure to obstruct the progress of involution, and the depth of the canal is altogether disproportionate to the size of the retained decidual or placental tissue or coagulum. Duncan has reported a case where a small bit of placenta was retained in which, at the time of the removal of the tissue eight months after the expulsion of the fœtus, the uterine canal was 8 inches deep. In my case I found that involution had made no progress at the time of the curetting, and the instrument which I used, although 11 inches long, was almost too short.

I cannot help feeling that the employment of the finger-nail as a curette is a dangerous procedure. It is of interest in this connection to note the results of some recent experiments by Prof. Fürbringer, as reported in the *N. Y. Med. Record* of March 10. The experimenter, employing for his subjects thirteen assistants and chiefs of clinics, required them to thoroughly disinfect their hands according to the most approved methods. He then succeeded in extracting enough septic material from under their finger-nails to start colonies in twelve out of the thirteen cases.

For my own part, I infinitely prefer the curette, which I do not hesitate to use in any case of abortion where I suspect the retention of even small quantities of matter, if I deem a removal of it requisite.

I have made some microscopical examinations of the specimen presented this evening, but will refrain from a discussion of the minute pathological aspects of fœtal death at present, hoping to make the subject one of more extended study at some future time.

A word with regard to the management of labor in general may not be entirely out of place in this connection. I lean more and more to the side of conservatism in obstetrics. I do not believe that it is *best* to use even the vaginal douche after labor without some special indication for it. As for the intra-uterine douche and the curette, I think they are not very often needed, but that when either one of them

[1] Matthews Duncan, Clinical Lectures, 1880.

is required, the other is apt to be needed too, and certainly I would not think of using the curette without both preceding and following its use with the douche. Further, a single intra-uterine douche is often worth more to the patient, if properly and thoroughly given, than a dozen.

Finally, I would like to reinforce what I wrote in a previous paper, read before this Society, with regard to the value of auscultation and external palpation as enabling us to avoid frequently repeated vaginal examinations. I have very recently read with great interest that Credé, always a conservative and successful obstetrician, has of late practically abandoned vaginal examinations, and teaches others to do so. At the time when the paper above referred to was read, I was unaware that any one had ever definitely insisted on this point.

DR. P. S. HAYES: I was glad to hear Dr. Hoag say that there was difficulty sometimes in administering the intra-uterine douche. His case brings forcibly to mind a case I had, where Dr. Nelson was called in consultation. The woman had a strongly adherent placenta. She had at the third or fourth month attempted to produce a miscarriage by the oil of tansy, or something of the kind, and had failed, but she had produced a good deal of irritation and, as a result, there was a strongly adherent placenta. I had to introduce my hand to remove the placenta. A few days afterwards she developed puerperal fever, and the strangest part of it was that apparently there was no odor. I used intra-uterine injections, and after one or two injections she had a chill and high temperature, and I found a difficulty in introducing the tube. In order to introduce the tube, I placed my hand on the abdomen and pushed the uterus upwards and backwards, and when that was done, there was a free discharge of fetid lochia which had accumulated there. While I did not use a speculum, I think if one had been used, and the tube carried to the fundus every time, the case would have required fewer injections to have made the good recovery which she eventually did make. In this case there was undoubtedly an anteflexion of the puerperal uterus, which effectually closed the uterine canal and caused the accumulation of the lochia in the uterine cavity.

DOMESTIC CORRESPONDENCE

"SPONTANEOUS" INFECTION.

Dear Sir:—There is but a single word in your excellent editorial ["On Spontaneous and Contact Infection in Puerperal Fever," THE JOURNAL, May 19, 1888], that I hope will not sink deep into the mind of the profession. In contradistinction to contact infection, you recommend on the authority of Miculicz the term spontaneous infection. I hope that the use of the word spontaneous will not prevail. It has had too unfortunate a history in biological literature to be used in any ordinary sense with infection. The signification that it acquired through the long discussion between Bastian and Tyndall cannot so soon be modified as to adapt it to use in this connection. It must hereafter mean what it did mean when the subject of spontaneous generation of bacteria was under discussion. Spontaneous infection in such a sense is, in the light of modern bacteriology, either an absurdity, or is calculated to deceive and perpetuate incorrect notions of infection. There is no longer a doubt that infection means invasion with living microbes. The spontaneous development of a human organism in the uterus would be no greater miracle than the spontaneous development there of the infecting microbe. Very respectfully,

BAYARD HOLMES, M.D.

1535 Bowen Ave., May 23, 1888.

[The use of the term spontaneous, in the designation of a certain class of cases of puerperal infection, is not free from objections, and Dr. Holmes' criticism is pertinent. But we employed the word, in the editorial mentioned, in a sense strictly technical and clearly defined. We still think the expression, spontaneous infection, as thus limited, preferable to the words auto-infection or self-infection, chiefly because its exact, technical signification in surgical literature is well-known and very generally accepted. In the use of words, as Professor Hill remarks, there is only one sound principle of judgment. That principle is not etymology, but good use; *i. e.*, *reputable*, *national* and *present* use.

The fallacy of ambiguity, that Dr. Holmes points out in his friendly stricture, we think is apt to arise in the processes of the popular, rather than of the professional mind. We are addressing a special class of educated men, and we have nothing whatever to do with popular impressions as to the meaning of this much abused word. At the same time, we are prepared to admit that a better term may be, and probably will be, coined.—ED.]

SEXUAL DESIRE IN INFANCY.

Dear Sir:—The following seems worthy of record, as I am unable to find a case on record where there there was evidence of sexual feeling at so early an age. Female, aged eleven months; has always been well. When ten months old the mother first noticed that when the child was left alone, on the floor, or bed, or in her cab, she would frequently go through some peculiar up and down motions of the pelvis, continuing thus for a minute or more, and then ceasing for the time. The mother finally concluded the motions were made to satisfy a sexual desire, and that the child desisted only after experiencing something corresponding to an orgasm. The father was sent to consult me about the matter, and as was natural, I was somewhat skeptical about the mother's diagnosis, and advised the father to have the case more closely watched and report again in a few days. In a day or two the mother brought the child to my office, and stated that in addition to what the father had reparted to me, she had noticed that whenever the baby perceived that she was observed in her exercises, she would immediately stop and show every appearance of shame, *i.e.*, would cover her face, and appear confused and excited. On examination of

the external genitals I was unable to discover anything unusual, except that the clitoris seemed a trifle large, and rather a brighter red than normal.

The parents are perfectly trustworthy people, and could have no conceivable motive in misrepresenting the matter. So it seems to me we must accept this as a case of manifestation of sexual feeling and attempt to satisfy this feeling, in a child of less than one year of age. M. G. SLOAN, M.D.

Dexter, Iowa, May 11, 1888.

BOOK REVIEWS.

INTUBATION OF THE LARYNX. By F. E. WAXHAM, Professor of Otology, Rhinology and Laryngology, College Physicians and Surgeons, Chicago. Pages 110. Published by Charles Truax, 75 and 77 Wabash Ave., Chicago: 1888. Price, $1.25.

The present small volume is probably the most complete and best description of the subject of intubation that has been placed before the public. Dr. Waxham is already so well known by his numerous articles upon this subject that we need hardly say that his authorship of the book makes it authoritative.

The history of the operation, the anatomy of the larynx as it pertains to the operation; the method of performing the operation; the after treatment and numerous illustrative cases are described. The book is well illustrated and the publisher has made a very attractive volume.

Intubation has succeeded so well in the hands of Dr. Waxham and of others who have given it a fair trial that the profession have justly come to look upon it as a most important operation.

MISCELLANEOUS.

NEW HAMPSHIRE MEDICAL SOCIETY.—The ninety-eighth annual meeting will convene in the Hall of the G. A. R., 15 Warren St., Concord, Tuesday, June 19, 1888, at 11 o'clock A.M. *President*, Dr. S. W. Roberts, Wakefield; *Secretary*, Dr. Granville P. Conn, Concord.

ASSOCIATION OF AMERICAN MEDICAL EDITORS.—The regular annual meeting of the Association was held at the Burnett House, Cincinnati, Monday evening May 7, 1888, and was attended by a larger number of representatives of the medical press than usual. The President, Dr. Wm. Porter, of St. Louis, delivered an interesting address. (See THE JOURNAL, May 12, 1888.) After the discussion of several questions, Dr. Mathews, Chairman of a Committee previously appointed, reported a constitution and By-laws which were adopted.

Dr. W. C. Wile, of the *New England Medical Monthly*, Danbury, Conn., was elected President for the ensuing year; and Dr. J. C. Culbertson, of the *Cincinnati Lancet-Clinic*, Secretary and Treasurer. The next annual meeting is to be held in Newport, R. I., on the first Monday evening in June, 1889.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.—*Preliminary Announcement of the Committee of Arrangements.*—This Association will hold its first triennial session in the City of Washington, during the 18th, 19th, and 20th of September next. The meetings of the Congress will be held in the evenings, beginning at 8 P.M., and those of the Societies composing the Congress will be held during the daytime, according to the programme each may respectively provide. The sessions will be open to the profession.

The Local Committee of Arrangements of the Congress has secured places of meeting for the Congress and each society in close proximity, so that the members of the respective societies can interchange attendance at pleasure, without inconvenience.

It is the purpose of the Executive Committee of the Congress to print the programmes of all of the societies, provided copies be supplied on or before August 15.

The Local Committee requests the secretaries of the societies to forward the names of those of their invited guests who have accepted their invitations, designating them as Foreign and American.

The Committee of Arrangements is composed of one member of each society represented in the Congress, as follows:

Samuel C. Busey, Association of American Physicians, Washington.

J. Ford Thompson, American Surgical Association, Washington.

R. T. Edes, American Neurological Association, Washington.

E. C. Morgan, American Laryngological Association, Washington.

W. W. Johnston, American Climatological Association, Washington.

J. E. Atkinson, American Dermatological Association, Baltimore.

A. Sydney Roberts, American Orthopedic Association, Philadelphia.

H. Newell Martin, American Physiological Society, Baltimore.

Samuel Theobald, American Ophthalmological Society, Baltimore.

S. O. Richey, American Otological Society, Washington.

A. T. Cabot, American Association of Genito-Urinary Surgery, Boston.

Inquiries may be addressed to the Chairman, Dr. Busey, at Washington, or to the representative member of each society on the Committee.

It may also be stated that the Committee of Arrangements of the American Gynecological Society, which will hold its next annual meeting in Washington at the same time, is composed of Drs. Busey, Taber Johnson and King.

HEALTH IN MICHIGAN, APRIL, 1888.—For the month of April, 1888, compared with the preceding month, the reports indicate that tonsilitis, influenza, and bronchitis decreased in prevalence.

Compared with the preceding month, the temperature in the month of April, 1888, was much higher, the absolute humidity was much more, the relative humidity was much less, the day and the night ozone were about the same.

Compared with the average for the month of April in the nine years 1879-1887, measles were more prevalent, and consumption of lungs, intermittent fever, remittent fever, diphtheria, pneumonia, bronchitis and scarlet fever were less prevalent in April, 1888.

For the month of April, 1888, compared with the average of corresponding months in the nine years, 1879-1887, the temperature was slightly lower, the absolute humidity, the relative humidity, the day ozone and the night ozone were slightly less.

Including reports by regular observers, and others, diphtheria was present in Michigan during the month of April, 1888, at 20 places, scarlet fever at 43 places, typhoid fever at 15 places, and measles at 45 places.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING JUNE 2, 1888.

P. A. Surgeon F. C. Craig, detached from Naval Hospital at Norfolk, and to the Naval Hospital at New York.

Asst. Surgeon A. R. Wentworth, detached from the U. S. S. "Galena," and to the Naval Hospital at New York.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE WEEK ENDING JUNE 2, 1888.

P. A. Surgeon S. C. Devan, granted leave of absence for ten days. May 29, 1888.

P. A. Surgeon P. M. Carrington, granted leave of absence for five days. May 29, 1888.